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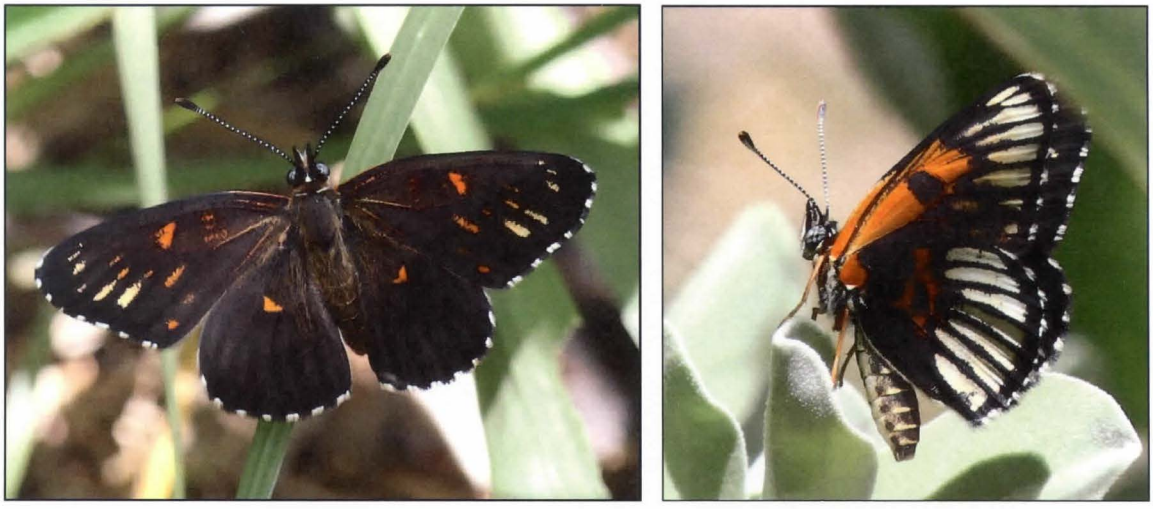
THE OFFICIAL PUBLICATION OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY ORGANIZED TO PROMOTE SCIENTIFIC INTEREST AND KNOWLEDGE RELATED TO UNDERSTANDING THE LEPIDOPTERA FAUNA OF THE SOUTHERN REGION OF THE UNITED STATES (WEBSITE: www.southernlepsoc.org/)

J. BARRY LOMBARDINI: EDITOR

ABERRANT THEONA CHECKERSPOT
PHOTOGRAPHED BY
MIKE RICKARD



Aberrant Theona Checkerspot, photographed in the Visitor Center butterfly garden at Bentsen-Rio Grande Valley State Park in Mission, TX, on June 5, 2014.

Mike expresses the following comments and reports the essential documentation (above): "I knew this butterfly was some kind of aberration at first sight, but it wasn't until I could examine the photos that I decided it was a *Chlosyne theona bolli*. In forty years of rearing, collecting, photographing, and observing this species, I've never seen an aberrant individual. However, there is a very similar aberration, same subspecies, depicted on the Butterflies of America website (www.butterfliesofamerica.com)."

MANY THANKS TO THE FOLLOWING DONORS TO THE SL SOCIETY

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UNUSUAL FLOWER FORMS AND COLORS FROM GARY'S POLLINATOR GARDEN

(SEE ARTICLE THIS ISSUE PAGE 73)

A double/triple form of a lavender-colored variety. The smaller multiple petals may be due to polyploidy (having a chromosome number in multiples of the typical diploid number). Red flowers in background are red varieties of double/triple forms of the same species.

A wind-blown single form, dark lavender variety of the opium poppy. Other colors of the species include red, pink, salmon, purple, and white (white seems to be the most unusual color variety to secure, and I have never had it in my garden).

A single form of a common red variety. The four petals are unusual in that their edges are incised, rather than smooth. I collected seeds from this type to see if it breeds true next year.

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The Southern Lepidopterists' Society is open to anyhone 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/

INDEX

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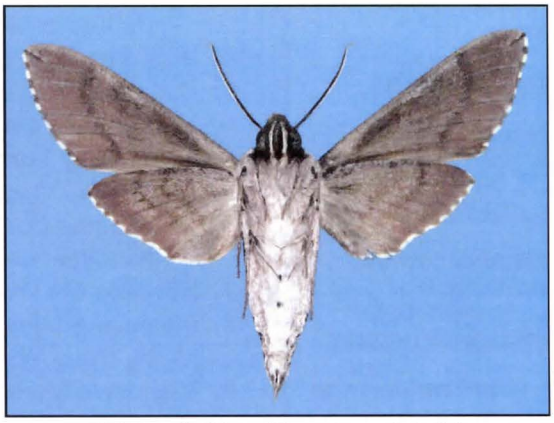
PARATREA PLEBEJA (FABRICIUS, 1777) IN WEST TEXAS AND WEST CENTRAL TEXAS

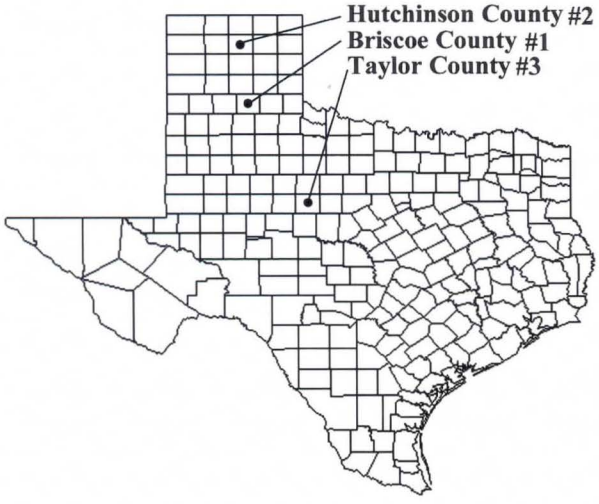
BY

MARIANNE KWIECINSKI AND J. BARRY LOMBARDINI

Plebian Sphinx (*Paratrea plebeja*), Abilene, TX (April 12, 2014)(dorsal).



Plebian Sphinx (*Paratrea plebeja*), Abilene, TX (April 12, 2014)(ventral).



County map of Texas and locations of where the 3 specimens of the Plebian Sphinx (*Paratrea plebeja*) were collected.

The speciman (#3) of the Plebian Sphinx (*Paratrea plebeja*) illustrated in this short note was found in Central West Texas in the city of Abilene (Taylor County) by M. Kwiecinski on April 12, 2014. Two other specimens (#1 and #2) were collected in West Texas in the last 18 years by J. B. Lombardini. The first specimen (#1) was collected in the city of Quitaque (Briscoe County), TX, on September 8, 1996, and the second specimen (#2) was collected in the city of Fritch (Hutchinson County), TX, August 29, 2010. (See County map of Texas.)

The Moth Photographers Group reports the distribution of the Plebian Sphinx as follows: *"From southern New England and New York westward through the Ohio Valley to Nebraska, and southward to eastern Texas and Florida."* (1)

"Caterpillar host plants are listed as common trumpetcreeper (Campsis radicans), florida yellow-trumpet (Tecoma stans), lilac (Syringa species), and passionflower (Passiflora species)." (2)

One of the host plants, the common trumpetcreeper (*Campsis radicans*), is found in the residential area where the present, illustrated specimen was collected.

The author thanks Ed Knudson for confirmation of the identification of the Plebian Sphinx.

References

1) Moth Photographers Group (7793 - *Paratrea plebeja*): http://mothphotographersgroup.msstate.edu/species.ph
2) Butterflies and Moths of North America: http://www.butterfliesandmoths.org/species/Paratraea[*sic*]-p Note: the insertion of "[*sic*]" in the URL is short for "*sic erat scriptum*" meaning "*thus was it written*". This indicates that the URL is the original script but there is an error (in this case spelling), *i.e.*, paratraea = error *vs.* paratrea = correct.

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DASYLOPHIA THYATIROIDES (WALKER, 1862) AND *DASYLOPHIA ANGUINA* (J. E. SMITH, 1797) (LEPIDOPTERA: NOTODONTIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

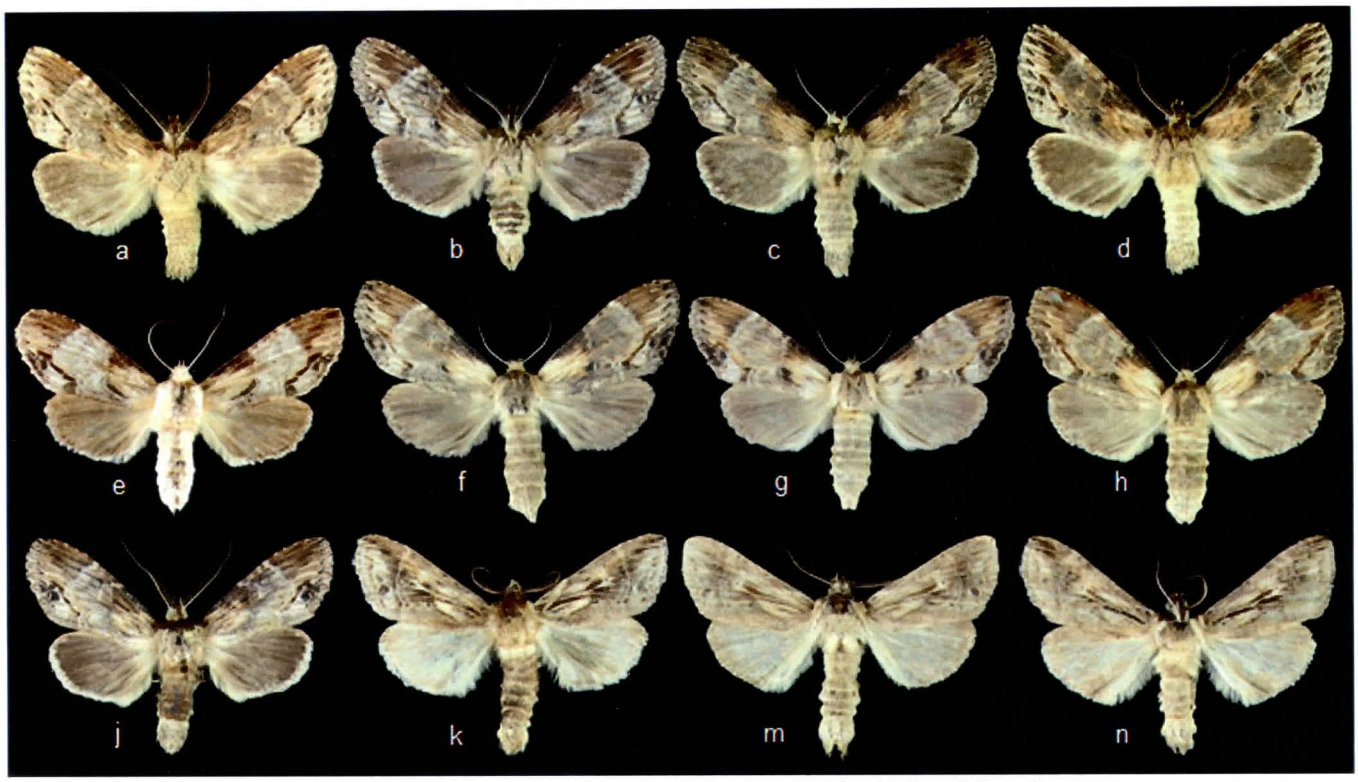

Fig. 1. Adult phenotypes of: ***Dasylophia thyatiroides*** (a-d, and j) males, (e-h) females, ***Dasylophia anguina*** (k-n) males.

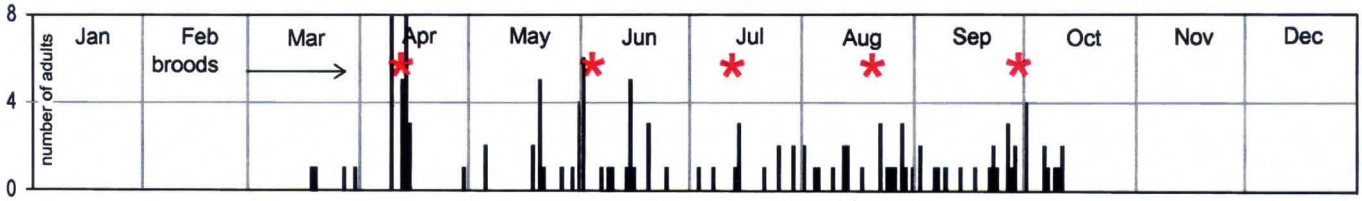

Fig. 2. Adult ***Dasylophia thyatiroides*** captured in Louisiana. n = 127

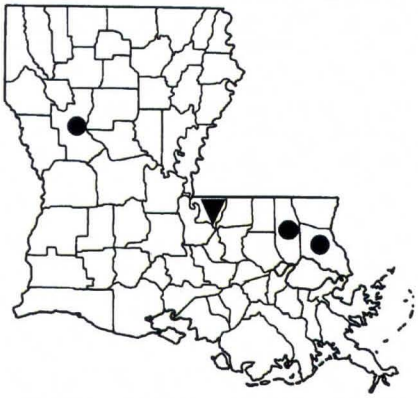

Fig. 3. Parish records: ***thyatiroides*** ●, ***thyatiroides & anguina*** ▼.

The notodontid moth ***Dasylophia thyatiroides*** (Walker, 1862) (Fig. 1) is occasionally encountered at a few locations across the state of Louisiana. Packard (1895) listed the range of ***thyatiroides*** to include only Maine, New Hampshire and New York. Covell (2005) listed the range of ***thyatiroides*** to include Nova Scotia and Quebec to North Florida, west to Michigan Missouri and Arkansas and Mississippi in the months April to September. Heppner (2003) lister the range for ***thyatiroides*** to include Nova Scotia to Florida, west to Michigan and Texas, in the months March to July and September.

Fig. 1. Label data. **West Feliciana Parish:** a. February 13, 2010, b and c. April, 13, 2010, d. July 4, 2010, k. March 27, 1981, m. August 26, 1981, n. April 22, 1986; **Natchitoches Parish:** e. June 1, 1986, g. October 11, 1985; **St. Tammany Parish:** f. May 21, 2005, h. June 8, 1997.

D. thyatiroides has five annual broods, first brood peaking mid-April, second brood peaking beginning of June with subsequent broods at approximate 40-day intervals (Fig. 2).

Then second species ***Dasylophia anguina*** (J.E. Smith) (Fig. 1) was listed by Packard (1895) to occur from southern Maine and Massachusetts to Florida and Georgia to Arkansas and Texas. Covell (2005) listed the range of ***anguina*** to include southern Maine and Quebec to Florida, west to Manitoba and Texas, in the months April through September. Heppner (2003) listed the range of ***anguina*** to include Quebec to Florida and Manitoba to Texas in the months February to June and August and November.

Within Louisiana, ***anguina*** is known from only three male specimens illustrated (Fig. 1k-n), all from West Feliciana Parish only. Based on the few Louisiana specimens and those listed by Heppner and Covell, ***anguina*** probably has numerous broods along the Gulf south states. Additional material is needed in order to properly assess the number of broods within Louisiana.

The parish records for both species of ***Dasylophia*** are illustrated in Fig. 3.

Literature Cited

Covell, Jr., C.V., 2005. *A Field Guide to Moths of Eastern North America.* Virginia Mus. Nat. Hist. spec. pub. No. 12. xv + 496pp., 64 plates.

Heppner, J.B., 2003. *Arthropods of Florida and neighboring land areas*, vol. 17: Lepidoptera of Florida, Div. Plant Industry, Fla. Dept. Agr. & Consum. Serv., Gainesville. x + 670. x + 670 pp., 55 plates.

Packard Jr., A.S., 1895. *Monograph of the Bombycine Moths of America North of Mexico, including their Transformations and Origin of the Larval Markings and armature. Pt. 1. Family 1. Notodontidae.* Nat. Acad. Sci. vol. VII. First Memoir on the Bombycine Moths.

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NABOKOV ON HIS ADMIRATION OF THE RED ADMIRABLE

From an interview with Alfred Appel, Jr, August 1970. [1] [Alfred Appel Jr. was a scholar noted for his investigations into the works of Vladimir Nabokov. He was on the faculty of Northwestern University and had a Ph.D. in English Literature from Columbia University. [2]]

In the course of the interview Alfred Appel asked Nabokov about his "...book on the butterfly in art" and the subject of the Red Admirable [original Old English name for the Red Admiral [3]] came up. The following are some quotes from the discussion.

Appel: ...That particular butterfly [Red Admirable] appears frequently in your own work, too. In *Pale Fire*, a Red Admirable lands on John Shade's arm the minute before he is killed, the insect appears in *King, Queen Knave* just after you've withdrawn the authorial omniscience—killing the characters, so to speak—and in the final chapter of *Speak Memory*, you recall having seen in a Paris park, just before the war, a live Red Admirable being promenaded on a leash of thread by a little girl. Why are you so found of *Vanessa atalanta*?

Nabokov: Its coloring is quite splendid and I liked it very much in my youth. Great numbers of them migrated from Africa to Northern Russia, where it was called "The Butterfly of Doom" because it was especially abundant in 1881, the year Tsar Alexander II was assassinated, and the markings on the underside of its two hind wings seem to read "1881." ....

Sources

1. *Nabokov's Butterflies: Unpublished and Uncollected Writings*, New Translations from the Russian by Dmitri Nabokov, Edited and Annotated by Brian Boyd and Robert Michael Pyle. Beacon Press, Boston, Massachusetts, 2000. Page 676.
2. http://en.wikipedia.org/wiki/Alfred_Appel
3. http://serenityspell.com/2012/04/20 /nabokovs-butterfly-of-doom-the-red-admiral/

MEEMAN - SHELBY FOREST: HOME IS WHERE THE HEART IS

BY

CRAIG W. MARKS

I grew up just south of Memphis, Tennessee, in the unincorporated neighborhood of Whitehaven, south of the city limits and just north of the Mississippi state line. My Mom and Dad had moved to Memphis in the late 1950's from central Oklahoma for my Dad's work. My Dad was a farm boy who loved being outdoors, fishing, hunting and hiking. In fact, while attending college at Oklahoma A&M (now Oklahoma State), he studied to be a forest ranger, but marriage and then two sons required a change of those plans.

So, while the reality of life sent him to Memphis, working as a sales representative for 3M, he never lost his love for the outdoors. As a result, it wasn't long before first he, and then my brother and I with him, were exploring locations in the Memphis area where we could experience nature and share that love of the outdoors. One of more memorable of those locations we visited on a recurring basis was Shelby Forest, in Shelby County, north of the Memphis City limits. I have many wonderful memories of hiking the trails there with him, my brother, Gary, and whichever dog we owned at the time. We fished in the lakes there. We hunted rabbits, squirrel, quail, dove and duck. My Dad hunted deer, later joined by Gary (by then I was running competitively and getting up early to train was required, getting up early to hunt deer was not so I slept late those days).

Now known as Meeman-Shelby Forest State Park, the Park consists of 13,476 acres of high ridges and hardwood bottomland area bordering the Mississippi River. The main office and visitor's center is at 910 Riddick Rd., Millington, Tennessee, about13 miles north of Memphis. The bluffs, identified as the Chickasaw Bluffs, are forested, primarily by red and white oaks, American beech, hickory and sweet gum trees. Other trees and understory of note include tulip poplar and red buckeye.

Poplar Tree Lake

The bottomlands include many cypress dominated sloughs and bayous. Some of the trees found in this region of the park include bald cypress, southern hackberry, black willow, green ash and water elm. In the hardwood bottomlands are cottonwoods, sycamore and southern hackberry. The mature Bald Cypress and Tupelo swamps cover over one half of the park. Over 200 species of songbirds, waterfowl, shorebirds and birds of prey, including the American Bald Eagle, can be seen in this favored area for bird-watchers.

The Park has two fishing lakes, Poplar Tree Lake and Piersol Lake and 49 campsites equipped with table, grill, electrical and water hookups. The campground includes a bathhouse with hot showers. In addition to the campground, the park has six two-bedroom cabins located in the wooded area around Poplar Tree Lake. In addition to hunting and fishing, Meeman-Shelby Forest caters to both hikers and bikers with approximately 20 miles of hiking trails and a five mile paved bicycle trail that is also accessible to persons with disabilities and/or strollers for families with young children. The hiking trails include the eight mile Chickasaw Bluff Trail along with the shorter Pioneer Springs Trail and Woodland Trail. There is also the eight mile Horse Trail for both horses and hikers.

Located within the State Park is Meeman-Shelby Forest State Natural Area, an 11,000-acre natural area managed by the Tennessee State Parks. There is also a Wildlife Management Area within the State Park that is managed by the Tennessee Wildlife Resource Agency to provide wintering waterfowl and fall shorebird migration habitat. The Eagle Lake Refuge, also in Shelby County, is located on the northern boundary of the State Park. Originally bottomland forest, when purchased in the early 1990's, it was a converted cotton farm. Eagle Lake is a shallow lake of approximately 20 acres with an average depth of three feet. The Refuge also includes a unique bald cypress forest. The area is now primarily forested, with a very small area of agricultural planting, and 18% of open water. Tree species include oak, beech, hickory, elm, gum, and tupelo. There is an observation tower, and approximately five miles of roads were constructed to provide access.

Eventually, Shelby Forest became even more attractive to me than just a place to visit with my Dad and brother. About the fifth grade, when I began to collect butterflies, it was like butterfly nirvana. I still remember while dove hunting along the edges of openings in the forest all of the incredible butterflies such as fritillaries, sulphurs, and swallowtails. The Spicebush, Black and Pipevine Swallowtails were abundant and fun, but the Tiger Swallowtails, including huge female black Tigers, were the stars. They were visible everywhere, soaring along the tree lines, taking nutrients at damp spots and feeding at flowers. They were the largest butterfly in the park, and I loved watching them.

Even after I moved to Louisiana, Shelby Forest remained a part of my life. We visited it so much on trips home to see my parents that my oldest children, Brett and Elyse came to love the place as much as we did. They would go with my Dad and his two labs, Lady and then Hersey, and spent hours walking as he told them stories about his past adventures there. Brett inherited his grandfather's love of all things outdoors, and, in particular, hunting, and speaks of Shelby Forest with the same reverence as his grandfather. There was never any complaint when, while in Memphis, the suggestion was made to go to Shelby Forest.

But enough of my family, let's talk butterflies. In addition to my own searches there, Bart Jones has been conducting NABA Fourth of July counts at this location since July, 2006. The center of the count is the visitor's center and the count includes Eagle Lake WMA. In the last couple of years, Bart has expanded the scope of his counts to include both the spring and fall. Primarily as a result of his efforts, with some of my records thrown in, the following represents a list of what has been seen along with the months each species has been reported.

Zebra Swallowtail (3-5, 6-7)
Pipevine Swallowtail (4-8)
Black Swallowtail (6-7, 9)
Eastern Tiger Swallowtail (4-10)
Spicebush Swallowtail (4-9)
Falcate Orangetip (4)
Cabbage White (4-5, 7, 10)
Checkered White (4, 7)
Orange Sulphur (3-7, 9-10)
Clouded Sulphur (3, 7, 9-10)
Cloudless Sulphur (4-7, 9-10)
Southern Dogface (6-7, 9)
Sleepy Orange (3-7, 9-10)
Little Yellow (4, 6-7, 9-10)
Dainty Sulphur (4, 7, 9-10)
Bronze Copper (8)
Henry's Elfin (3)
Red-banded Hairstreak (4, 9-10)
Gray Hairstreak (4-7, 9-10)
Eastern Tailed Blues (4-7, 9-10)
Spring/Summer Azure (3, 5-8, 10)
Harvesters (5-9)
American Snouts (4-7, 9-10)
Silvery Checkerspot (4-7, 9)
Phaon Crescent (4, 6-7, 9-10)
Pearl Crescent (4-7, 9-10)
Gulf Fritillary (7, 9-10)
Variegated Fritillary (3-5, 7, 9-10)
Great Spangled Fritillary (6-7)
Common Buckeyes (4-7, 9-10)
Question Marks (3-8)
Eastern Commas (3, 5-10)

Mourning Cloak (2-4,9)
Red Admirals (4-7, 9-10)
Painted Lady (4, 7, 9)
American Lady (4-5, 7)
Red-spotted Purples (5, 6-7, 9-10)
Viceroys (4-5, 7, 9-10)
Goatweed Leafwing (3-5)
Hackberry Emperor (4-7, 9-10)
Tawny Emperor (5, 7-8)
Monarch (4-5, 7, 9-10)
Carolina Satyr (5-10)
Gemmed Satyr (4, 7, 9)
Northern Pearly-eye (7, 9)
Creole Pearly-eye (8)
Little Wood Satyr (6)
Silver-spotted Skipper (4-7, 9-10)
Hayhurst Scallopwing (7, 9)
Juvenal's Duskywing (3-4)
Horace's Duskywing (3-4, 6-7)
Wild Indigo Duskywing (7)
Common Checkered-skipper (4, 7, 9-10)
Common Sootywing (4, 7, 9-10)
Least Skippers (6-7, 9-10)
Clouded Skipper (6-7, 9-10)
Fiery Skippers (4, 6-7, 9-10)
Little Glassywing (5-7, 10)
Sachem (4, 6-7, 9-10)
Tawny-edged Skipper (7)
Crossline Skipper (7)
Zabulon Skippers (4, 6-7, 9-10)
Northern Broken-dash (7, 9)
Southern Broken-dash (7)
Dun Skippers (5-7, 9)
Lacewing Roadside Skipper (4, 6-7, 9)
Pepper and Salt Roadside Skipper (4-5)
Ocola Skipper (9)

At times, the number of individual species that have been seen has been astounding. For example, in July, 2010, 38 Zebra Swallowtails were reported; during the 2011 and 2013 counts, 475 and 466 Eastern Tiger Swallowtails were reported and in July 2011, 121 Spicebush Swallowtails were counted. Highs of 45, 69, 31, 43 and 75 have been recorded for Orange Sulphurs, Clouded Sulphurs, Cloudless Sulphurs, Little Yellows and Dainty Sulphurs, respectively. Twice, over 100 Eastern Tailed Blues have been seen. In September, 2012, 109 Phaon Crescents were reported. On three occasions, its cousin, the number of Pearl Crescent exceeded 100, with a high of 269. On occasion over the years, over 100 American Snouts, Variegated Fritillaries, Common Buckeyes, Hackberry Emperors, Common Checkered-skippers (twice) and Fiery Skippers have been recorded. Equally impressive counts included 89 Zabulon Skippers in July, 2010; 60 Least Skippers in September, 2012; 50 Silver-spotted Skippers in September, 2013 and 48 Viceroys that same year.

Black female Eastern Tiger Swallowtail (Jeff Trahan)

In my experience, Shelby Forest is one of the most reliable spots I have visited over the years to see black female Eastern Tiger Swallowtails and Harvesters. Of course, the Eastern Tiger Swallowtail is dimorphic, particularly in the South, as part of a Batesian relationship with the Pipevine Swallowtail and others. The Pipevine is reported to be unpalatable to avian predators due to toxins ingested during the larval stage. There are several butterflies that mimic the Pipevine Swallowtail, all presenting an example of Batesian mimicry. These include the female black Tiger Swallowtail, the Red-spotted Purple, the female Black Swallowtail and the female Spicebush Swallowtails, all of which can regularly be seen flying along-side the Pipevine Swallowtail in Shelby Forest. I've read of areas in the south where 50% of the females are reported to be of the black variety. I've never found the ratio to be even close to that number during my travels in Louisiana. While I have no statistics for the percentage of black females at Shelby Forest, on occasion in late summer and early fall, I have experienced percentages that certainly seemed to approach fifty percent.

The Harvester is the only carnivorous butterfly in North America, with three to six generations in the southern U.S. Boothe (2009) documented a flight period from February to December in Florida. Harvester caterpillars feed on woolly aphids. Hall *et al.* (2007), recorded woolly maple aphids, *Neoprociphilus aceris*, (which feed on members of the greenbrier family of climbing shrubs and vines) and woolly alder aphids, *Prociphilus tesselatus*,

(which feed on members of the birch family of trees) as common prey in Florida. Boothe (2009) found the caterpillars feeding on woolly ash aphids on green ash over the course of two years in his backyard in Liberty County in the Florida Panhandle. The aphids were tended by Argentine ants. He had also previously seen them feeding on Beech Blight Aphids on American beech in the panhandle region.

Harvester habitat along the Chickasaw Bluff Trail

Harvester (Jeff Trahan)

Bart Jones saw ten on April 19, 2014! He has also reported finding Harvesters on September 7, 2013 (2 seen), July 5, 2009 (1 seen), June 29, 2013 (5 seen), July 9, 2006 (1 seen) and July 8, 2007 (1 seen). The flight is moth-like, almost frenetic, and when it finally lands, the wings are held over its back like a hairstreak rather than horizontal. Adults are not known to feed at flowers; rather, Scott (1986) reported they feed on aphid honeydew, dung, sap, and also sip from mud. On August 17, 1996, I saw nine, both perching on the sun-splashed leaves of lower tree branches and flying low to the ground or perching on moist ground, including wet roads and streambeds as my Dad, son, Brett and I entered and then walked along the Chickasaw Bluff Trail off of Jackson Hill Road. Over 18 years later, on September 7, 2013, my Dad and I returned to that location, and I found two at moist sand, one of which was the largest female I've ever seen. Also present were Gemmed Satyrs and Lacewing Roadside Skippers.

My Dad and I were in Shelby Forest on August 12, 1995, in a low area near cane and I found Creole Pearly-eyes out on the gravel road. One day in May, 2011, he and I saw a dozen Summer Azures along with numerous Question Marks and Eastern Commas. Above Piersol Lake, down the road from the Camp Headquarters, I found a colony of roadside skippers along the old road that extends past the picnic area. I ended up counting twelve

Pepper and Salt Roadside Skippers. They were darker than those I had seen in Louisiana. Bart Jones has also reported finding that species within the Park.

Pepper and Salt Roadside Skipper habitat near Piersol Lake

On that day in early September, 2013, the ironweed was in bloom and there were butterflies everywhere. I ended up with 32 species and over 300 individual butterflies. We pulled off of the road that runs to the south of Piersol Lake onto a dirt, side road at the back of that lake. Some of the taller ironweed had as many as 12 swallowtails on it, with the Spicebush and Eastern Tiger Swallowtails joined by Cloudless Sulphurs, Northern Broken-dashes and Silver-spotted Skippers. Added to that picture were several Ruby-throated Hummingbirds zipping back and forth, defending identifiable stands of the ironweed. A male Zabulon Skipper dashed out and circled my head. I extended an outstretched finger, and to my amazement, it landed on my finger. Hackberry Emperors were abundant along the tree line, landing on my arms to take sweat, along with Viceroys and Red-spotted Purples flying out to investigate me as I moved past their perches. Both my Dad and I stood for several minutes, just taking in all the color and movement. It was, for those few moments, a perfect snapshot of why Shelby Forest has been such a special place for both of us.

I lost my Mom last fall, after a fifteen year battle with multiple myeloma. While she didn't accompany us to Shelby Forest on our hunting trips as boys, later, she would go when Dad and I would take the grandkids. I have distinct memories of a trip in late summer one year. It was toward the end of the day. Dad had driven us to a pull-off on a high ridge overlooking a vast expanse of cultivated bottomland with the Mississippi River beyond that. As we stood enjoying the view, we were surrounded by numerous fresh, male Tawny Emperors with their dark maroon and iridescent purple coloring. They swirled around our heads, landed on us and then dashed away again, a whirlwind of constant motion. I can still see my Mom standing in the dappled sunlight, her mouth open in amazement, laughing at her grandkids as they tried to induce the Emperors to land on them.

My Dad has since moved to Louisiana to be closer to his family. This past May, he and I drove back to Memphis to close on the sale of my parent's house there. Sunday, May 25, we went out to Shelby Forest to look around. Although we only saw 16 species, they included a Harvester, Summer Azures, Spicebush Swallowtails and Red Admirals along the stream beds near the Chickasaw Bluff Trail. There were Pepper and Salt Roadside Skippers, more Summer Azures, two patrolling Eastern Tiger Swallowtails and a female Little Glassywing along the road at the back of the picnic area at Piersol Lake. Oddly, we didn't see any black female Eastern Tigers.

While it is great to have my Dad so close now, my youngest daughter, Mattie, has noted that she will miss going to Memphis to see her grandparents and visit several places she grown to love (such as the Peabody Hotel at Christmas, Corky's Barbecue anytime and the dog park at Shelby Farms in the afternoon). I have similar feelings about those same places, but even more so about Shelby Forest where I have spent so many happy days with my family, from boyhood into my adult life. I try not to think that I might not ever spend another day there; rather, I keep telling myself that we will continue to go home to Memphis in the future, and that when we do, Shelby Forest will be included.

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Visitors March 8, 2014, to the entomological research collection of Vernon & Charlotte Brou – (L to R) - Shane Dixon, Linda Barber Auld, Dorothea Munchow, Vernon Antoine Brou Jr., (behind camera Charlotte Brou).

J. Donald Lafontaine & Vernon Antoine Brou Jr. February 27, 2014, visiting research collection of Vernon & Charlotte Brou in Abita Springs, Louisiana USA (behind camera Charlotte Brou).

HACKBERRY EMPEROR (*ASTEROCAMPA CELTIS*) LIFE HISTORY

BY

BERRY NALL

A female Hackberry Emperor was captured and held with a potted Hackberry tree (*Celtis laevigata*) for a couple of days; she was then released. No eggs were seen at that time. However, a few days later I discovered she had placed some eggs on the plant. When found on 2-XI-2012, they were already showing signs of development. The buff-colored eggs blend in very well with the Hackberry leaves: I later found caterpillars on the plant whose position suggested the female had possibly two additional egg clusters.

Freshening eggs, 2-XI-2012

The caterpillars emerged on November 4. In the first instar they had black heads. Tawny Emperor caterpillars, which use the same plant, have brown heads in the first instar (at least, those of the one group which I have raised did). Additionally, the Hackberry larvae were not as communal as the Tawny Emperor larvae were.

Recently emerged caterpillars, 4-XI-2012

In the second instar the head became somewhat knobby; the knobbiness was most pronounced in the third instar.

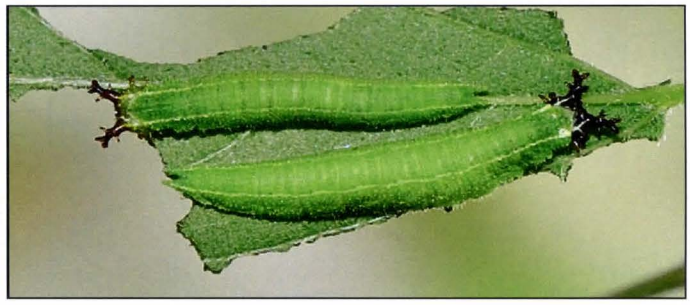
Inset: a black-form face of a caterpillar raised in 2010.

First instar is now 4mm, 5-XI-2012

Several caterpillars were released in an early instar; 3 were raised to maturity. These pupated 19-20 days after they emerged from the eggs; the adults emerged 8 days later.

Second instar, 7-XI-2012

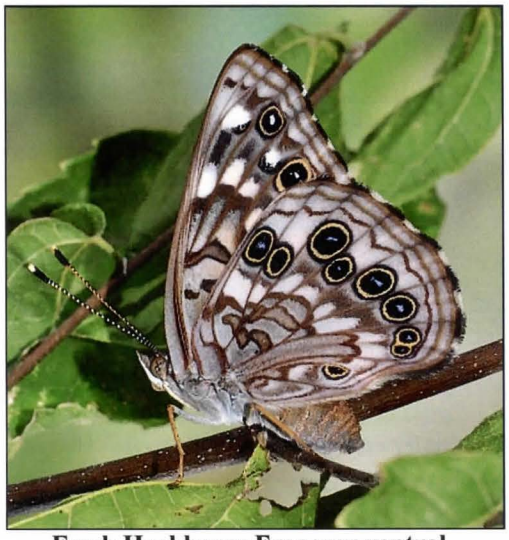
Third instar, 9-XI-2012



Fourth instar: larger caterpillar is 15mm, 12-XI-2012

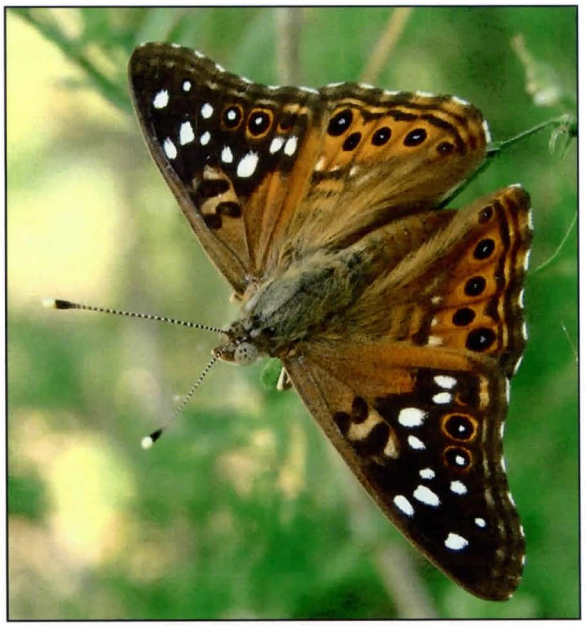
Fifth instar, 21mm, 18-XI-2012

Chrysalis, 23-XI-2012



Fresh Hackberry Emperor ventral, 1-XII-2012

Fresh Hackberry Emperor dorsal, 1-XII-2012



Hackberry Emperor, Falcon Heights, TX, 5-V-2007 (Note: Specimen not reared.)

The SL Society and the Editor thank Mr. Berry Nall for allowing us to reprint his life history of the Hackberry Emperor (*Asterocampa celtis*). The original publication on the internet is listed: http://leps.thenalls.net/content2.php?ref=Species/Aparturinae/celtis/life/celtis_life.htm

Mr. Nall's **website** *"Berry's Butterfly Photos"* can be viewed at http://leps.thenalls.net/ His contact E-mail is lb@thenalls.net

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A QUARTER CENTURY OF LEPIDOPTERA CONSERVATION IN NORTH CAROLINA

BY

STEPHEN HALL

(FORMER INVERTEBRATE ZOOLOGIST/LANDSCAPE ECOLOGIST, NORTH CAROLINA NATURAL HERITAGE PROGRAM)

After working at the North Carolina Natural Heritage Program (NHP) for more than 24 years, I left at the beginning of March as a result of budget cuts, along with five other long-time members of the Program. Much of my work at NHP was devoted to the conservation of insects – particularly Lepidoptera – and this seems like a good time to review what we have accomplished in our state, the problems we encountered, and how we can continue these efforts.

Lepidoptera are a natural target for biodiversity conservation, the main concern of NHP: they are among the most diverse group of organisms; they contain a high proportion of habitat specialists; they play critical roles in many ecological processes; and they are known to be at risk from a number of different human activities. Butterflies, moreover, are one of the most popular groups of all animals and there is wide support for their conservation. Lepidoptera as a group are also relatively easily surveyed and there is a large number of field guides and other works available for their identification, especially for the macro-lepidoptera.

Despite these advantages, only a small amount of data on Lepidoptera – almost all on butterflies – had been compiled by NHP when I started working there in 1990. There were also a number of obstacles that had to be overcome before we could begin to effectively include them in our conservation efforts, the first being a general lack of knowledge about their distribution and status within the state.

Lepidoptera Inventories

The North Carolina NHP, like its sister programs across the country, relies on information obtained from biological inventories to assess the conservation needs of native species, natural communities, and ecosystems. All of our evaluations are based on the documented presence of these elements within specific natural areas. Although Brimley's Insects of North Carolina (Brimley, 1938), later supplemented by Wray (1967), included records for 1,253 species of Lepidoptera, almost all represented opportunistic collections or sightings, with little information provided on the exact location of the records or on the abundances of the species at those sites or anything at all on habitats.

To obtain the more ecologically-rich information we required, we began our own series of Lepidoptera-focused surveys in 1991, targeting specific types of habitats within particular natural areas of high conservation significance.[1] By the end of that decade, we had conducted surveys in eight TNC Preserves, six state parks, five military bases, four other state preserves, two National Forests, two university research areas, and fourteen tracts of private lands. Following that period of intensive surveys, we incorporated Lepidoptera surveys into our more standard natural area inventories – which had been a goal in itself – and have continued sampling for Lepidoptera up through 2013, when our last major project was halted mid-way through due to the budget cuts.

By the time I departed, we had accumulated a total of 2,269 samples taken from 356 sites, representing 55,731 records covering 1,131 species (primarily macro-lepidoptera). Adding in thousands more collection records obtained by Bo Sullivan; records from the All Taxa Biological Inventory conducted at the Great Smoky Mountains National Park; records from a survey of the Highlands area conducted by James Adams, Dale Schweitzer, and Tim McCabe; and records from several other sources, we had compiled a fairly comprehensive, if definitely not final picture of the state's Lepidopteran fauna. The distribution of sites where Lepidoptera were a major sampling focus (moths as well as butterflies) is shown in Figure 1.

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[1] Dale Schweitzer, then chief entomologist with the Nature Conservancy, took part in the initial surveys, broadening our original interest primarily in butterflies to include macro-moths as well. Bo Sullivan, who had himself been surveying the Lepidopteran fauna of the NC Coastal Plain since the 1970s, also joined us for several of these inventories and continued to be involved all the way to 2013, when our last major inventory was halted mid-way due to the budget cuts.

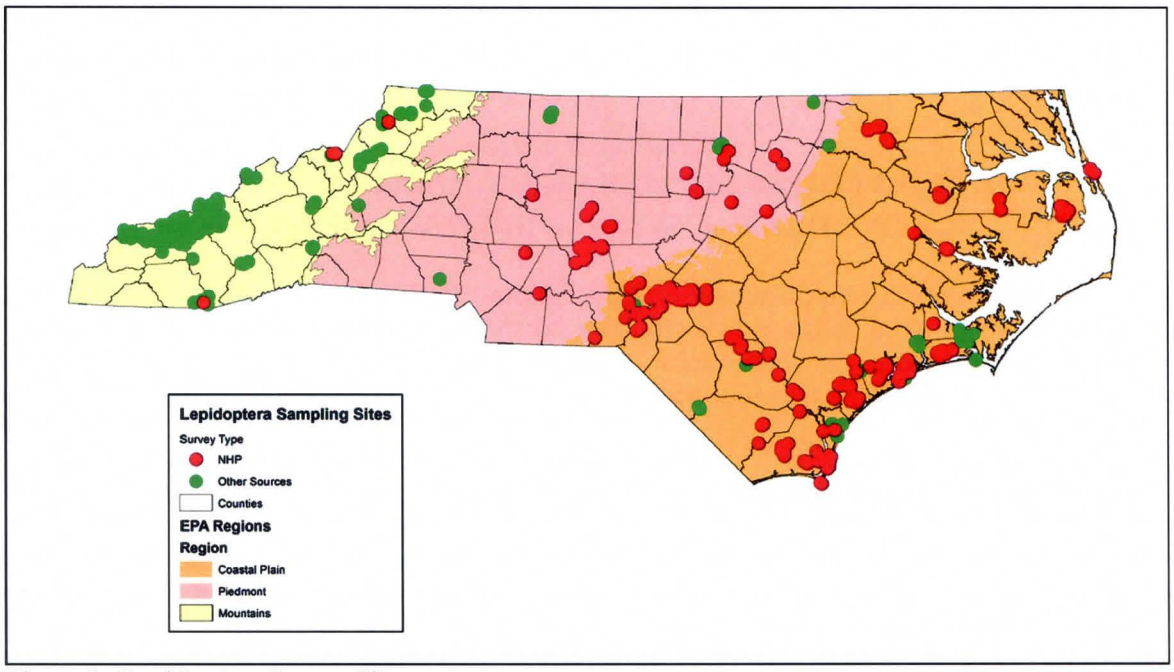

Figure 1. Lepidoptera Survey Sites

Assessment of Species' Conservation Needs

This wealth of data provides a strong basis for evaluating the conservation significance of individual species, the first step in determining appropriate conservation action. Following conventions established by the Nature Conservancy (now maintained by NatureServe), NHP uses information on the overall size of a species' range, the actual area it occupies, its dependence on narrowly distributed habitats, and the existence of clear threats to its existence to estimate its degree of imperilment within the state[2]. Lists of Significantly Rare Species are published by NHP every two years. The most recent, produced in 2012[3], identified 148 species of Lepidoptera of state-level concern, *i.e.*, vulnerable to extirpation from the state, and at least a few, such as the Venus Flytrap Cutworm Moth (*Hemipachnobia subporphyrea*), as vulnerable to complete extinction. An additional 113 species were placed on the NHP Watch List: species that appear to be rare within the state but without enough known about their distribution, habitat associations, and other factors needed to estimate their priority for conservation.

Species-Specific Conservation

For the most imperiled organisms, conservation efforts are merited at the level of the individual species, usually involving legal protection offered by federal or state listing of the species as Threatened or Endangered. In North Carolina, however, insects are excluded from the state list of protected species (although Crustaceans and Mollusks are covered). The only form of legal protection, thus, is offered by the federal Endangered Species Act. For insects to qualify for federal listing, however, the bar appears to be raised very high, with only species globally ranked as G1 or G1G2[4] in the NatureServe system usually making the cut even for consideration.

In North Carolina, six species of Lepidoptera meet this criterion: *Hemipachnobia subporphyrea, Atrytonopsis loammi, Papaipema eryngii, Neonympha mitchellii francisci, Pyrgus wyandot*, and *Atrytonopsis* sp. 1. Additionally, the nominate subspecies of the Arogos Skipper, *Atrytone a. arogos*, is considered a critically imperiled subspecies (T1T2), which also qualify for federal listing consideration. Except for *Pyrgus wyandot*, where we have made only casual attempts to determine its status (mainly by Harry Legrand), the rest have all been included in intensive surveys conducted by NHP. *Neonympha mitchellii francisci* was, in fact, federally listed as Endangered as a consequence of the status surveys we did for this subspecies in 1991 and 1992, and the only Atlantic Slope population of *Papaipema eryngii* – now a Candidate for Federal Listing – was discovered during the course of one of our Lepidoptera-focused inventories conducted in the mid-1990s.

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[2] NatureServe also combines these measures across the entire range of the species to produce a global assessment of risk, *i.e.*, Global Ranks.

[3] Available at http://portal.ncdenr.org/c/document_library/get_file?uuid=1dc3c5b9-7822-44a8-b3dd-afda38e07bd0 &groupId =61587

[4] See NHP Rare Animal List for a description of the ranks.

Although we conducted additional status surveys (for US Fish and Wildlife) on *Hemipachnobia subporphyrea*, *Atrytonopsis* sp. 1, and *Atrytone a. arogos*, none of these resulted in any listing action being taken, despite strong evidence that these taxa are truly endangered. Our sole remaining population of the Arogos Skipper has, in fact, apparently become extirpated, not having been seen since 2009 when a fire roared through the center of its habitat. One of only four of our populations of *Hemipachnobia subporphyrea* was also severely affected by that fire, although it managed to persist within the area (Bo Sullivan, pers. comm.). Our only known population of *Atrytonopsis loammi* (*sensu strictu*) vanished sometime in the late 1990s due to unknown causes, and we confirmed that the population of *Atryonopsis* sp. 1 is confined to just a 30 mile stretch of our barrier islands, where it has been losing ground to beach-front development over the past several decades, making it ever more vulnerable to hurricanes.

Conservation actions available to species listed under the federal Endangered Species Act can be highly effective – the population of *Neonympha m. francisci* has been the target of considerable research and recovery projects, including a five year project done by NHP as well as ongoing efforts involving the Fort Bragg Endangered Species Branch and Nick Haddad (NC State University) and his students. However, such intensive species-focused efforts are intrinsically limited in application, requiring a large investment of time, effort, and money that is difficult to justify except in the most extreme cases, especially for insects. For the vast majority of our species of conservation concern, this type of help is simply out of reach.

Site- and Landscape-Focused Conservation

Much more inclusive is the approach to conservation used by Natural Heritage Programs, which makes both the species and the natural areas they inhabit the target for conservation efforts. In North Carolina, natural areas are evaluated for conservation action based on the total number of imperiled species and communities they possess, weighted by their degree of imperilment and by the quality (*i.e.*, viability) of their occurrences within those sites. A site containing a population of *Hemipachnobia subporphyrea* will score high based on the presence of a G1S1 species alone. A site that has a high quality occurrence of this species – based on habitat quality and extent, if not measures of actual abundance – will score higher than one with a lower quality occurrence. A site that supports populations of *Hemipachnobia*, *Atrytone arogos* (G3T1S1), *Euphyes berryi* (G2S1), *Photedes carterae* (G2S2), and *Agrotis buchholzi* (G2S2) would score higher still, since protection of that site would involve conservation of a large number of imperiled species through a single action. As of 2014, NHP had identified over 2,400 sites across the state as critical for biodiversity conservation, including a substantial number where Lepidoptera were the highest ranked factors. One such site supported all five of the species mentioned above, making it globally significant based on its Lepidoptera alone!

A problem with this approach is that it focuses too closely on areas with concentrated quality. Surrounding areas are often neglected, particularly if they do not support resident populations of rare species or high quality natural habitats. The surrounding landscapes, however, may provide additional areas of habitat for many species and serve the critical function of maintaining links between areas of habitat. For many Lepidoptera and other insects, these landscape functions are especially critical since many of their populations come and go at any one site and require entire landscapes in order to maintain their existence within a given region. Unlike vascular plants and many vertebrates, Lepidoptera have few adaptations for surviving major environmental disturbances on site. Instead, many species follow a meta-population model, relying on survival of at least a few populations during any one environmental calamity and recolonization out from those refuges to recover areas of habitat where populations were extirpated.

Over the last fifteen years, NC NHP developed a survey-based approach to assessing landscape integrity, making use of the number of landscape-sensitive species (as described above) recorded within a particular habitat area as the basis for measurement. Particular importance is given to the number of habitat specialists – of which there are many among the Lepidoptera – allowing us to measure the effects of habitat fragmentation with respect to particular types of habitat.

Since 2003, most of our insect surveys have been aimed as much at assessing the conservation priorities of landscape units at a regional level as at determining the conservation priorities of individual sites at the local level. The last major survey we completed – an analysis of the conservation priorities of the Lower Roanoke Floodplain[5] – covered a four county area, with 45 species of Lepidoptera used to evaluate the integrity of seven habitat/landscape units.

[5] Legrand, H.E. and Hall, S.P. 2014. A Natural Heritage Inventory of the Roanoke River Floodplain, North Carolina. Available as a pdf upon request to the NC Natural Heritage Program, 1601 MSC, Raleigh, NC 27699-1601.

Development of Insect-Specific Management Plans

The NHP approach to site prioritization makes good use of data from all species, without any taxonomic bias. When it comes to managing natural areas for the protection of biodiversity, however, differences between taxa must also be considered. As described above, Lepidoptera and other insects use a very different strategy for coping with environmental disturbance than do most vascular plants and vertebrates: their metapopulation-based strategy for survival requires that both refugia and routes for recovery need to be maintained as part of any management effort that may produce local extirpation.

Much of our original motivation for conducting insect-focused surveys was, in fact, driven by management considerations. Seven of these projects evaluated the effects of the prescribed burns used to maintain open, savanna habitats in TNC Preserves, state parks and game lands, military bases, and National Forests. In virtually all cases, only the impacts or benefits to vascular plants or Red-cockaded Woodpeckers had been considered in planning the burns. These species, however, are tolerant of annual burning and of burns that covered all areas within a given preserve or habitat unit. Our findings, however, indicated that Lepdoptera diversity actually plummets under that type of burn regime, with even species highly associated with savanna habitats – *e.g.*, *Hemipachnobia subporphyrea* and pitcher plant moths (*Exyra* spp.) – suffering adverse impacts. Optimal conditions for Lepidoptera instead appeared to exist in areas where only about a third of the habitat was burned in any one year and where the frequency of burning any one patch was every three years. Sites with that pattern of burns not only had the highest diversity of savanna-dependent species but were the only ones where *Atrytone arogos, Hemipachnobia subporphyrea*, and other highly imperiled species were present. As a result of our studies, burn prescriptions were modified to take insects into account, especially in areas where there were concentrations of species NHP had designated as particular conservation concerns.

The other major management issue driving several of our surveys was the use of insecticides to control gypsy moth outbreaks. Our single largest Lepidoptera-focused project was a two-year study of the impacts of a massive campaign to eradicate an Asian strain of gypsy moths in the particularly Lepidoptera-rich southern part of our Coastal Plain. The information we were able to provide on the Lepidoptera fauna in this area, based on previous surveys, played a key role in helping to conserve their fauna: the majority of high priority natural areas were either excluded from applications of Bt or were treated with Gypchek instead, a much more gypsy-moth-specific control agent than Bt.

These studies not only produced a great deal of information useful for improving management practices for the conservation of Lepidoptera but they also resulted in long-lasting partnerships between the agencies involved, establishing a dialogue between conservation-oriented organizations such as NHP, TNC, and the NC Division of Parks and Recreation, and agencies charged with pest control such as USDA APHIS, US Forest Service, and the NCDA Gypsy Moth Treatment Program. We hope to continue those collaborations into the future, even in the face of the inevitable turn-over in personnel.

Moving On

The information on ecosystem management and priorities for protection provided by our surveys have more than proven their worth. The era where intensive Lepidoptera-focused inventories could be done routinely is now long past, but we were fortunate enough to have had enough time to conduct those surveys in order to obtain a large set of baseline data. We can now afford to be much more selective in our survey efforts, looking for specific species or groups rather than trying to sample entire faunas throughout a given year. In that respect, Lepidoptera are now treated much as the other taxa we include in our surveys, *e.g.*, vascular plants, and vertebrates. As of 2013, insect sampling had become a routine and important part of our efforts to prioritize conservation at the site and landscape levels.

Although the North Carolina NHP lost a third of its staff in the recent budget cuts, the Program itself has survived and Harry Legrand is still there to look after the conservation interests of Lepidoptera and other insects (although he also in charge of all other terrestrial animals as well). The ability of NHP to conduct inventories – the very lifeblood of the Program – is in doubt, however, even though the careful prioritization of conservation efforts by the Program based on site-specific data is needed now more than ever: with the worldwide extinction crises at hand, efficient and carefully justified use of increasingly scarce resources is becoming ever more critical.

In order to help supply NHP with a continuous flow of new information, as well as to help the cause of Lepidoptera conservation more generally, a group of North Carolina lepidopterists, including myself, Bo Sullivan, Merrill Lynch, Parker Backstrom are working with webmaster Tom Howard to develop a website for NC moth

records similar to what Tom and Harry have created for the state's butterflies and Odonates. Habitat associations and conservation status will be the two main areas of emphasis. The website will also be interactive, with the public encouraged to provide site and habitat data (along with photographs). We hope this will give Lepidoptera – moths as well as butterflies – a much broader base of appreciation and support, some of which we hope will also be directed towards the efforts of the Natural Heritage Program. We also hope that by enlisting a much larger group of observers that we can fill in the gaps in our knowledge about the distribution and status of the state's Lepidopteran fauna, including their presence within habitats not normally covered in NHP surveys, *e.g.*, suburban and urban landscapes. More about that in future newsletters – stay tuned.

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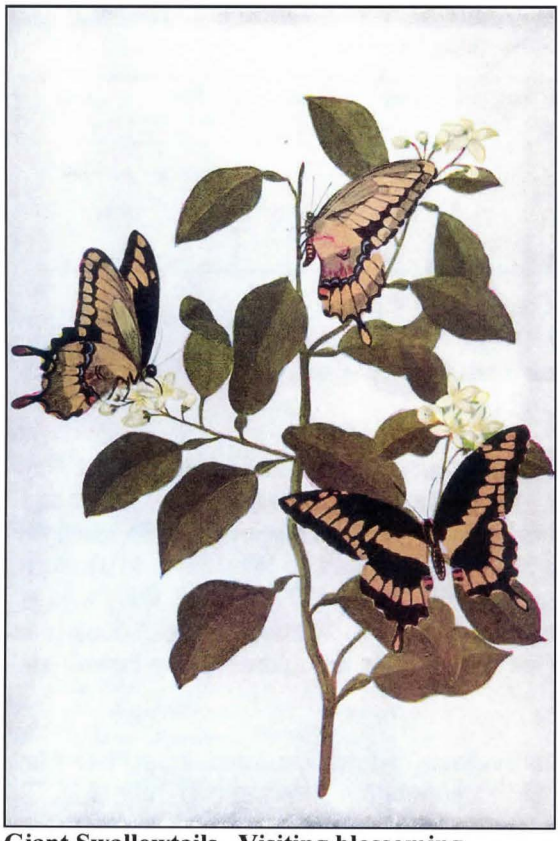
BUTTERFLIES WORTH KNOWING [1]

THE GIANT SWALLOWTAIL

BY

CLARENCE M. WEED



Giant Swallowtails. Visiting blossoming branches of the orange tree. From a drawing by Mary E. Walker.

"The largest of our North American butterflies is a magnificent insect with a wing expanse of some four inches and with a rich coloring of black and yellow more or less suffused with greenish or bluish iridescence that gives it a striking beauty as it flies leisurely about from flower to flower or stops to lay an egg upon some bush or tree. The tails are long and expanded toward the tip, their prevailing color being black with a broad splash of yellow near the end. In a general way we may say that the upper wing surface is black marked with two bands of orange-yellow while the under surface is yellow marked with two bands of black." [Quote from page 62.]

"The Giant Swallowtail is a tropical species which is abundant throughout the Southern states and during recent years seems to have been gradually extending its northern range. It is now commonly found as far north as forty-two degrees latitude, from Nebraska eastward. In New England it is occasionally taken in Connecticut, Massachusetts, and even in Maine, but its appearance in this region is exceptional." [Quote from page 63.]

"In the range-growing regions of the Southern states the caterpillars of this butterfly feed freely upon the leaves of citrus fruits and they are often called "orange puppies" or "orange dogs". Probably their curious appearance and their habit of resting for long periods upon leaf or twig gave rise to this name." [Quote from page 63.]

"The life-history of this species in more northern regions differs in the choice of the food plant and the number of broods. It feeds upon various members of the rue family, including common rue and prickly ash, as well as upon certain poplars and probably other trees." [Quote from page 64.]

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1) **Weed, Clarence M.,** 1925. *Butterflies Worth Knowing*, Little Nature Library, Doubleday, Page & Company for Nelson Doubleday, Inc., The Country Life Press, Garden City, N.Y.

DATANA CONTRACTA WALKER, 1855 (LEPIDOPTERA: NOTODONTIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

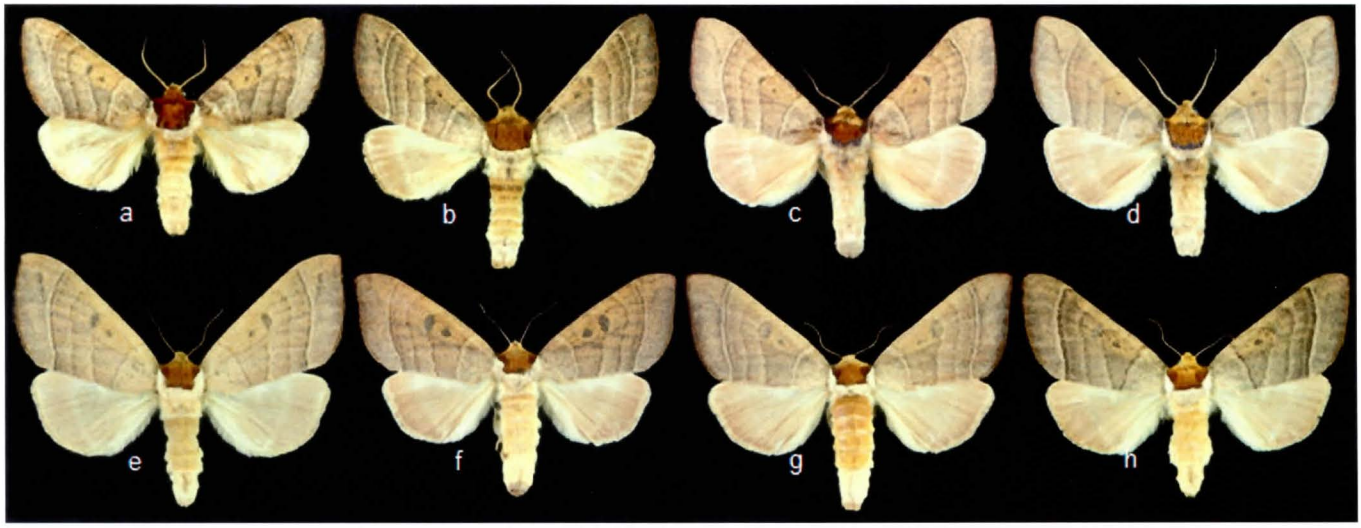

Fig. 1. ***Datana contracta*** phenotypes: (a-d) males, (e-h) females.

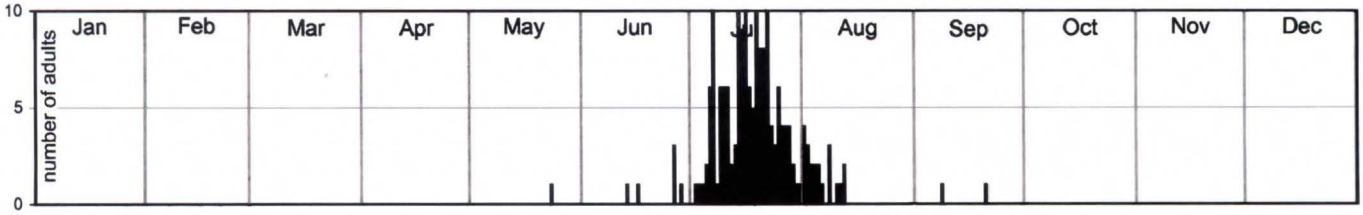

Fig. 2. Adult ***Datana contracta*** captured in Louisiana. n = 191

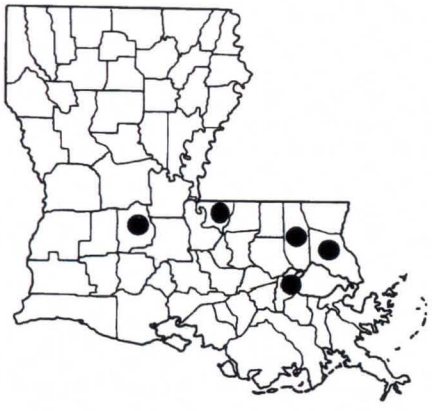

Fig. 2. Parish records for ***Datana contracta.***

The notodontid moth ***Datana contracta*** Walker, 1855 (Fig.1) is fairly common where encountered in Louisiana.

Packard (1895) listed the range of ***contracta*** to include the states of New York, Illinois, New Jersey, Massachusetts, Pennsylvania, Wisconsin, Missouri, District of Columbia and Arkansas. Heppner (2003) listed the range of ***contracta*** to include Maine to Florida and Wisconsin to Texas in the months July through September. Covell (2005) listed the range of ***contracta*** to include Maine to Florida west to Wisconsin and Arkansas in the months June and July. This species was not addressed by Powell and Opler (2009).

In Louisiana ***contracta*** is univoltine, adults captured from late-May through late-September, the brood population peaking mid-July (Fig. 2). The parish records are illustrated in Fig. 3.

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(Vernon Antoine Brou Jr., 74320 Jack Loyd Road, Abita Springs, Louisiana 70420 USA; E-Mail: vabrou@bellsouth.net)

THOSE OTHER POLLINATORS

BY

GARY NOEL ROSS

Here of late, insect pollinators have received increasing attention from the national and international news media. Seems as if overall numbers of these beneficial insects have experienced a precipitous decline. While lepidopterans are indeed pollinators, attention has been focused on *Apis mellifera*, the domesticated European honeybee—a species that collects both pollen and nectar to produce honey, and the primary pollinator of economically important agriculture crops. (These hymenopterans are responsible for pollinating 70 of the 100 crop species that feed 90% of the world's population. This amounts to about $30 billion/year.) As evidence, public reports indicate that current honeybee hives are down by as much as 60 percent from what they were in 1947. Although the jury is still out as to precise cause (or causes), theories include: pesticides (especially neonicotinoids and cocktails of other insecticides), infections from mites (especially *Varroa* and *Acarapis* species), microbial pathogens, malnutrition, loss of habitat, immunodeficiencies, genetic factors, and even changing beekeeping practices.

Of course I realize that the Southern Lepidopterists' Society is dedicated to the world of butterflies and moths, not hymenopterans. Nonetheless, editor Barry Lombardini and I thought that my observations and photographs in my garden centered on honeybees might be welcomed by SLS members who embrace broad issues of conservation. As such, I will share some of my experiences.

For the past several years I have been favoring my spring garden in the front of my house with poppies: Shirley poppy (a cultivar of the European Flanders or Field poppy, Iceland poppy, California poppy, and opium poppy. But because of its larger size, I have favored the opium poppy, also known as the breadstick poppy and common garden poppy. (The technical name, *Papaver somniferum,* translates as "sleep inducing poppy" and refers to the species' historic use as a potent narcotic.) My initial interest was to learn what pollinated the plants' magnificent flowers, flowers that I could remember from my father's garden when I was a child in New Orleans. The blooms of this species are uniquely spectacular: large (up to nearly six inches in diameter), thin silky petals in colors ranging from dark red, crimson, maroon, deep purple, lavender, pink, and salmon, and in compositions that range from single four-petal cup-shaped forms to double and triples that sport numerous elongate and tightly packed petals. To my surprise—and I must add, my disappointment as well—the flowers were not visited by butterflies but by the European honeybee and to a lesser extent, the eastern carpenter bee (*Xylocopa virginica*, a docile species that often bores holes in soft wood and does not make honey). At this same time, visits to four friends who also include opium poppies in the gardens in and around Baton Rouge provided similar observations. Over several years I have not observed even a single butterfly pause as it approached my kaleidoscopic garden (I suspect because the blooms lack nectar and/or ultraviolet cues).

The inflorescences of all species of poppy are packed with an abundance of cream-colored, pollen-bearing anthers (anthers are the tips of stamens—the male reproductive organs). The largest opium poppy flowers may have as many as 100-150 or so, all easily visible in the single-form flowers but more concealed in the double/triple forms. (Pollen from these anthers is gathered by foraging honeybees and packed into pollen baskets on their hind legs for transport back to the hive. There, the pollen serves an inordinately rich source of protein for both adults and young.) I have

on occasion counted as many as five honeybees working an individual flower. (The maximum number seemingly is limited by the physical space of the actual inflorescence.) Most visitations occurred between early morning and noon, whereas carpenter bees were more active in mid to late afternoon. I theorize that the honeybees and carpenter bees portion the day according to their different circadian rhythms, thus minimizing competition and maximizing success. A direct consequence of this pollen transport is the cross-pollination (fertilization) of plants that results in their ability to produce fruits and seeds. Much of these, of course, are marketed as food for humans and domesticated animals. And let's not forget the non-edible agriculture-related commodities such as fibers, medicinals, and wood products.

Poppies hail from geographic regions with pronounced winters and scanty to moderate rain. Therefore, poppies typically are not cultivated in the Deep South. However, with a bit of nurturing, Southerners can achieve reasonable success, albeit with a bit of labor. While California poppy, Shirley poppy, Iceland poppy, and opium poppy are all available, I have discovered that the large opium poppy, which is native to the Middle East, is the most productive for honeybees—at least in Baton Rouge. [NOTE: the U.S. Drug Enforcement Administration classifies all parts of *P. somniferum* as a "Schedule II" controlled substance. Latex from the pods is the raw source of opium, which can be used directly or later processed into morphine, heroine, and codeine. Historically, however, the DEA has liberally allowed homeowners to cultivate the plants in small numbers for ornamental purposes.]

To begin, secure either seeds or young plants from the internet, a local plant nursery, or friends. Both seeds and young plants must be placed into the ground in autumn—optimally between mid October and mid November. This early planting encourages the cold tolerant but heat sensitive plants to put on a modicum of grown and establish a substantial root system before the numbing cold of winter sets in (by the way, the plants do not have to be protected during freezes). Your tiny plants will become dormant throughout the winter. But do not fret. Come the first warm days of March, the young plants will resume growth. (Incidentally, do not consider relocating plants after an initial planting because poppies do not transplant easily.) Now is the time to fertilize; use a liquid or time-release formulation. The poppies then bolt, achieving a height of 2-5 feet by early to mid April. Once mature, the plants produce stems that will terminate in a hooked flower bud. These hooks quickly straighten as the large flowers unfurl. While the blooming period will last about three weeks, individual flowers persist for only a few days because of the progressing ambient heat. When petals drop the attractive seed pods turn brown—mid to late May. When small windows open beneath the protective crown, seeds can be harvested by shaking the pod in a bag. Each pod contains an incredible number of seeds: 2000-3000. These can be stored in your refrigerator until next autumn or even for the next several years. As a bonus, the seeds are highly nutritious and tasty; ergo they make a substantial addition to bakery items such as breads, cakes,

muffins, and even pancakes. When the plants desiccate and turn brown—usually by early June—they should be pulled; I use all discards as mulch in my perennial gardens.

In conclusion, I have learned that the floral displays in my poppy-dominated spring garden have proven to be not only an eye catcher for me and all passersby, but a banquet for honeybees and carpenter bees. The plants are more attractive to the bees than even clover and privet—other early spring bloomers that typically offer a rich source of pollen (and nectar) for foraging bees emerging after their long winter hiatus. Therefore, I suggest that we who profess a genuine love of butterflies and moths may wish to practice good husbandry for other small wildlife as well. After all, lepidopterists in general are concerned about the environment, conservation, and biodiversity. If we can enjoy preparing a garden feast for preferred guests, might not we also consider extending our invitation to their beleaguered kin? If nothing else, shouldn't our concern for the world's food supply and our individual well-being stimulate us to act? All entomologists agree that without honeybees, our world would be a very different place. That's my "food for thought."

Photos illustrate variation in color and form of the opium poppy, *Papaver somniferum*, with various numbers of honeybee pollinators. All photos unstaged and from author's garden. April 2014.

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Ross, G.N., 2013. From Flanders Fields to the Land of Oz. *Grit* magazine, May/June (Vol. 131:3), pages 44-48.
Ross, G.N., 2014. Planting memories. *Natural History* magazine, April (Vol. 122:3), pages 10-13.
http://www.nhmag.com/naturalist-at-large/222700/planting-memories
www.colonycollapsedisorder
www.opiumpoppy
www.pollen

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TWO NEW FUNDS FOR THE McGUIRE CENTER

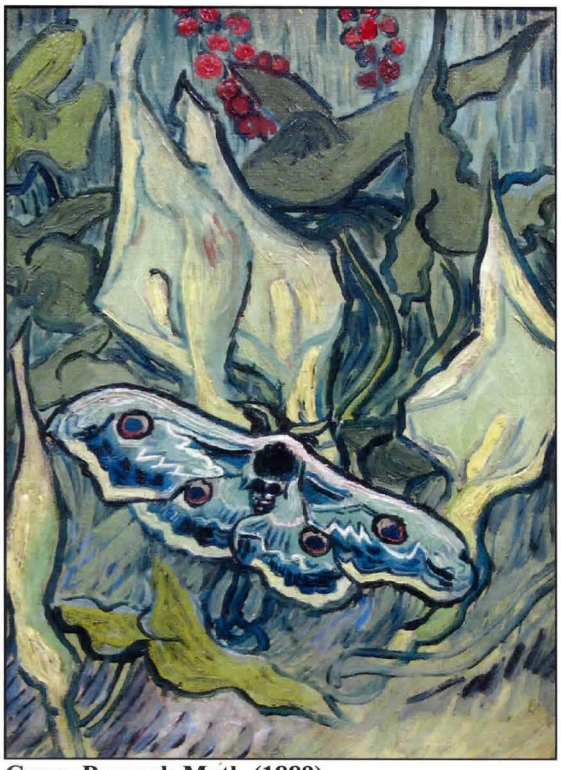
Recently, two funds have been established at the McGuire Center for Lepidoptera and Biodiversity at the Florida Museum of Natural History, University of Florida, in Gainesville. The Thomas C. Emmel Founding Director's Endowment and the Gary Noel Ross Scholarship Fund (#019219). The Emmel endowment is to honor Dr. Emmel for his leadership and vision during the planning, development and first 10 years of growth of the McGuire Center. Proceeds from the endowment will be used to support collections improvement and collection-based research in the form of graduate research fellowships and project grants at the McGuire Center. The Ross fund, which will be become an endowment once the fund reaches a target amount, will be used for scholarships to assist undergraduate and graduate students specializing in Lepidoptera at the University of Florida.

Both the Emmel endowment and the Ross fund welcome one-time gifts, pledges over several years, gifts of stock, insurance or property and bequests. If you would like to make a credit card gift to the Emmel endowment, please go to the Florida Museum website at www.flmnh.ufl.edu/mcguire019211. Otherwise, address correspondence to:

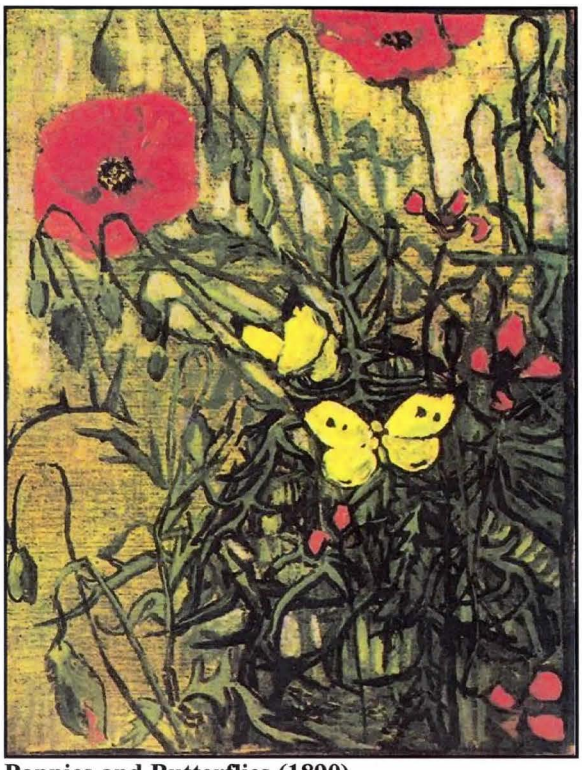
Marie Emmerson
Director of Development
Florida Museum of Natural History
PO Box 112710
Gainesville, FL 32611-2710

[If you have any questions about making a gift, Please e-mail Marie at emmerson@ufl.edu, or Call (352) 256-9614.]

MOTH AND BUTTERFLY PAINTINGS – VINCENT VAN GOGH [1-3]



Green Peacock Moth (1889)
Vincent van Gogh (1853-1890)



Poppies and Butterflies (1890)
Vincent van Gogh (1853-1890)

"In May 1889 Van Gogh began work on Green Peacock Moth which he self-titled Death's Head Moth. The moth, called death's head, is a rarely seen nocturnal moth. He described the large moth's colors" of amazing distinction, black, grey, cloudy white tinged with carmine or vaguely shading off into olive green. Behind the moth is a background of Lords-and-Ladies. The size of the moth and plants in the background pull the spectator into the work. The colors are vivid, consistent with Van Gogh's passion and emotional intensity. Van Gogh Museums's title for this work is Emperor Moth." [1]

This image, originally posted to Flickr, was reviewed on 23 August 2009 by the administrator or reviewer Multichill who confirmed that it was available on Flickr under the stated license on that date. [2]

Description: Nederlands, Nachtpauwoog, 1889, Vincent van Gogh (1853-1890) Olieverf op doek, 33.5 x 24.5 cm Van Gogh Museum, Amsterdam (Vincent van Gogh Stichting), F610
Date: 23 June 2009, 08:53
Source: Nachtpauwoog
Author: Nick Sprakel from Utrecht, Netherlands

"Debra Mancoff, author of Van Gogh's Flowers, described Poppies and Butterflies: "Vivid red poppies and the pale yellow butterflies float on the surface of twisting dark stems and nodding buds, all against a yellow-gold background. Although composed of natural motifs, Van Gogh's layering of pattern in Butterflies and Poppies suggests a decorative quality like that of a textile or a screen." Mancoff compared this study to the Japanese prints he admired." [1]

This work is in the public domain in the United States, and those countries with a copyright term of life of the author plus 100 years of less. [3]

Artist: Vincent van Gogh (1853-1890)
Title: Poppies and Butterflies
Medium: oil on canvas
Date: April-May, 1890 (Saint-Rémy)
Dimensions: 34.5 x 25.5 cm
Current location: Van Gogh Museum, Amsterdam (F748)
Source/Photographer: repo from artbook

Sources

1) http://en.wikipedia.org/wiki/Butterflies_(Van_Gogh_series)
2) http://en.wikipedia.org/wiki/FileWLANL_-_artanonymous_-_Nacthpauwoog.jpg
3) http://en.wikipedia.org/wiki/FileVan_Goph_-_Klatschmohn_und_Schmetterlinge.jpeg

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LITHOPHANE LACEYI (BARNES & McDUNNOUGH, 1913) (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

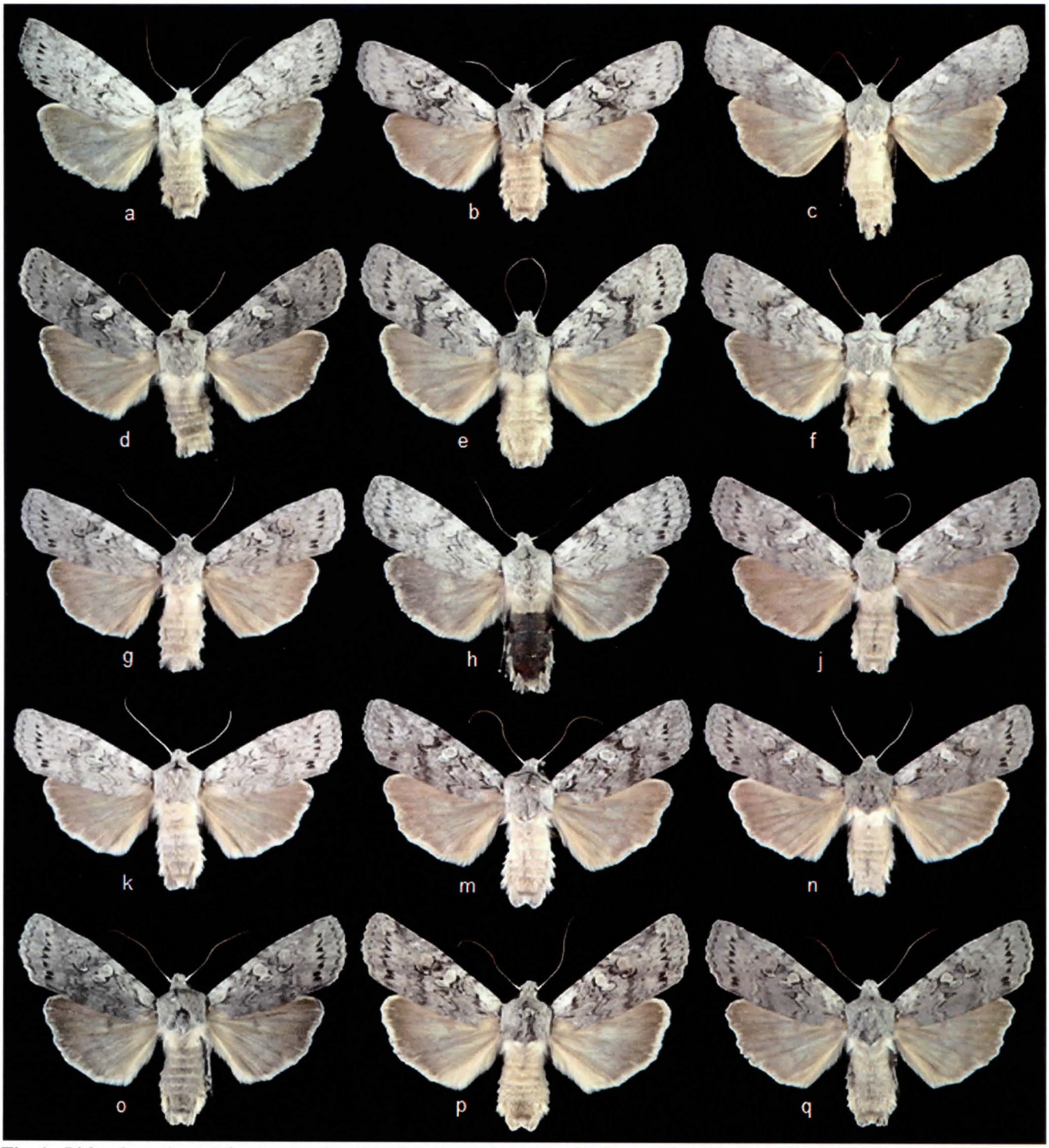

Fig. 1. ***Lithophane laceyi*** phenotypes: **(a - g)** males, **(h - q)** females. All from ***Abita Springs Entomological study site**, dates of capture: **a.** Mar 1, 2011, **b.** Jan 6, 1985, **c.** Jan 31, 1997, **d.** Jan 20, 2005, **e.** Jan 9, 2002, **f.** Jan 22, 2004, **g.** Jan 6, 1983, **h.** Feb 10, 2014, **j.** Dec 24, 1984, **k.** Jan 27, 1984, **m.** Jan 18, 1986, **n.** Jan 19, 1989, **o.** Jan 17, 2011, **p.** Jan 8, 1999, **q.** Jan 8, 2000.

Fig. 2. Parish records for ***Lithophane laceyi***.

Specimens of the noctuid moth ***Lithophane laceyi*** (Fig. 1) have been captured in each of the past 33 years at the *Abita entomological study site (Fig. 2) in St. Tammany Parish, Louisiana. Though, the true identity of this subtle, but obviously variable appearing species only recently came to light when a series of specimens representing all of the known phenotypes were submitted for DNA and morphological analysis. Over the decades, numerous other ***Lithophane*** species names were assigned to some of these Louisiana variable phenotypes of ***laceyi*** by several experienced taxonomists based alone upon physical attributes. The problem is that apparently this little known and uncommonly encountered species is quite variable in appearance even at a single location as illustrated in Fig.1, the ***Abita Springs entomological study site.**

In Louisiana, ***Lithophane laceyi*** is univoltine, the population peaking at the ***Abita Springs entomological study site** (Fig. 2) during mid to late January, the coldest month of the year (Fig. 3).

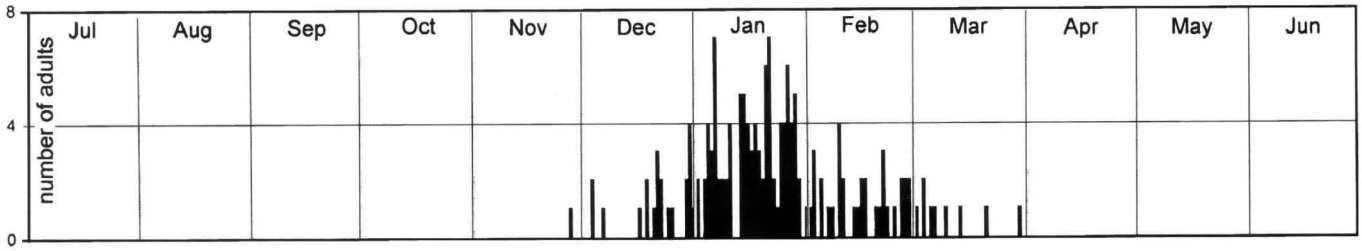

Fig. 3. Adult ***Lithophane laceyi*** captured in Louisiana. n = 160

Species of ***Lithophane*** more or less visually similar to ***laceyi*** may include some phenotypes of: ***Lithophane pruena*** (Dyar, 1910), ***Lithophane puella*** (Smith, 1900), ***Lithophane tepida*** Grote, 1874, ***Lithophane antennata*** (Walker, 1858), ***Lithophane torrida*** (Smith, 1899), ***Lithophane pertorrida*** (McDunnough, 1942), ***Lithophane georgii*** Grote, 1875, ***Lithophane laticinerea*** Grote, 1874, ***Lithophane grotei*** Riley, 1882, and ***Lithophane unimoda*** (Lintner, 1878), though some of these species occur in more easterly, northerly, or westerly distribution in North America. I have pasted here in italics, the original description of ***laceyi*** (Barnes and McDunnough, 1913). Though, as in so many earlier species descriptions, there is only mention of the lone male type. It has taken a century to sort out how variable this particular species appears and where does it occur other than the type locality, now that a sizeable series of good quality specimens (n=160) became available.

Graptolitha (Xylina) laceyi sp. nov. *♂. Head and thorax pale gray deepening in color posteriorly, collar crossed by dark line near apex ; primaries gray, maculation distinct and sharply defined ; pale gray patch on costa at base extending downwards to black basal dash and crossed by a faint dark gray dentate subbasal line; t. a. line geminate, inner line gray, outer blackish, filled with pale gray, dentate below costa, with strong inward angles on median and anal veins and a distinct prominent W mark below cell, outwardly angled above inner margin; claviform outlined in black, filled with dark gray, resting on teeth of W mark; orbicular large, slightly oblique, constricted towards base giving figure of 8 appearance, outlined in black, filled with pale gray, basal portion filled with dark gray shade; reniform upright, outlined in black, filled with ground color, with a slight inward angle along median vein towards base of wing, this being tipped with white, and a corresponding angle towards apex of wing; a dark median shade crossing lower inner portion of reniform and angled inwardly in submedian fold; t. p. line geminate, rather indistinct, outer line gray, inner line blackish, prominently dentate opposite cell and on anal vein, contiguous with median shade below reniform; s. t. line dark gray, accentuated by a series of prominent arrow like dashes preceding it in subterminal area between inner margin and vein 6, angled outwardly below costa, then parallel to outer margin; terminal dark line; fringes concolorous. Secondaries smoky, paler basally, with discal dot. Beneath, primaries smoky, paler along costa and outer margin, with small discal spot; secondaries whitish, sprinkled with smoky with waved postmedian line and large discal spot. Expanse 43 mm. Habitat. Kerrville, Texas (Nov.) (Lacey). I ♂. Type, Coll. Barnes. Belongs in the cinerosa group, but may be distinguished by its paler color and sharper, more contrasted markings with more prominently dentate t. a. line. We take pleasure in naming it after the collector from whom we have received so many new and interesting species; it has been figured in Vol. II, No. 1 of our Contributions.*

Fig. 4. Graptolitha (Xylina) ***laceyi,*** Kerrvile, Texas, type ♂.

I have provided the less than helpful image of ***laceyi*** (Fig. 4) taken from plate XII, specimen no. 3 in the original century old species description (Barnes and McDunnough, 1913). This species was not mentioned by Forbes (1954) nor by Covell (1984).

I am indebted to and thank J. Donald Lafontaine for his most helpful assistance over many years of my queries of sorting out the identity of this relatively uncommon species.

***Abita Springs entomological study site:** sec. 24,T6S, R12E, 4.2 miles northeast of Abita Springs, Louisiana.

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(Vernon Antoine Brou Jr., 74320 Jack Loyd Road, Abita Springs, Louisiana 70420 USA; E-Mail: vabrou@bellsouth.net)

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BUTTERFLIES WORTH KNOWING [1]

THE BLACK SWALLOWTAIL

BY

CLARENCE M. WEED

The Black Butterfly: Caterpillar, chrysalis and butterfly.
From a drawing by W. I. Beecroft.

While the Black Swallowtail is not so large as some other members of the group, it is probably the best known to most people. It is found throughout many months of the year in practically all parts of North America south of Canada, and has the habit of flying freely about fields and gardens in search of flowers from which to suck its nectar food, and of plants on which to deposit its eggs. The female butterflies have a remarkable ability in selecting only members of the great family Umbelliferae for this purpose. In consequence the caterpillars are generally to be found feeding upon carrots, parsnips, parsley, and various wild species belonging to this order. [Quote from page 59.]

The larvae of the Black Swallowtail have certain characteristics in which they differ from many other caterpillars. After each moult they do not devour their cast skins, which happens in the case of many of their relatives. When feeding, as well as when resting, they remain exposed upon the leaf and seem never to attempt to conceal themselves, as is the habit with a large proportion of caterpillars. It is probable that this instinct for remaining exposed to view bears some relation to the curious means of protection possessed by this as well as other Swallowtail caterpillars. When disturbed one of these larvae will push out from just back of the head the strange-looking, orange-yellow Y-shaped organ which gives off a very disagreeable odor. These osmateria organs are generally believed go be defensive against the attack of birds and various other enemies, although they seem not to be effective against insect parasites. [Quote from page 60.]

References

1) **Weed, Clarence M.,** 1925. *Butterflies Worth Knowing*, Little Nature Library, Doubleday, Page & Company for Nelson Doubleday, Inc., The Country Life Press, Garden City, N.Y.

BUTTERFLIES OF SOUTH FLORIDA, MAY 2014, WITH TAXONOMIC NOTES ON *HERACLIDES ANDRAEMON* (PAPILIONIDAE) AND A NEW LARVAL FOODPLANT RECORD FOR *KRICOGONIA LYSIDE* (PIERIDAE)

BY

ANDREW D. WARREN

South Florida is known for its unique tropical fauna of Lepidoptera, with many species and subspecies not found elsewhere in the United States. From a young age, I've casually studied South Florida's butterfly fauna from afar, trying to imagine the butterflies and their habitats through literature accounts (*e.g.*, Minno & Emmel, 1993) and conversations with residents and visitors. Even though I first arrived in Florida (Gainesville) in August 2006, it took me until August 2013, to make my first butterfly-related trip to South Florida, mainly for the Pink-spot Sulphur (*Aphrissa neleis*), a species I had been writing about ever since detecting its presence in the USA for the first time in 2011 in the McGuire Center's collection (Warren & Calhoun, 2011, 2012). Fieldwork on the 2013 trip, however, consisted mainly of collecting along neighborhood streets, due to the urban habitat of *A. neleis* and its non-native larval foodplant, *Lysiloma sabicu*.

The main reason it took me so long to make it down to South Florida to look for butterflies was that I already knew there is essentially no habitat available where one can collect butterflies. I had known that, due to habitat destruction caused by the millions of residents in the area through urban development and agriculture, very few natural areas remain. I had no real idea, however, how frighteningly small the remaining natural areas are, and how restricted the remaining distributions of some South Florida butterfly species have become.

During the second week of May 2014, I had the opportunity to make a second butterfly-related trip to South Florida. The primary objective of the trip was to participate in the annual survey of the Schaus' Swallowtail (*Heraclides aristodemus ponceanus*) on Elliott Key, within Biscayne National Park. I also took the opportunity to briefly explore butterfly habitats in the Homestead area, as well as in the Florida Keys. After having spent the past eight years curating butterfly specimens from South Florida in the McGuire Center collection, I really wanted to familiarize myself with some of the localities in the region that lepidopterists have been frequently visiting for the past 60 years. Because the majority of these areas are now off-limits to collecting, I instead concentrated on obtaining photographs of as many species as possible.

The expedition began on May 9th, upon departing the headquarters of Biscayne National Park on a boat headed to Elliott Key. Fieldwork was conducted on Elliott Key on May 9th, 10th, and 11th, with a few observations on the morning of May 12th before returning to the mainland shortly after noon. The main objective of fieldwork on Elliott Key was to initiate the 2014 annual survey for the Schaus' Swallowtail (*Heraclides aristodemus ponceanus*). Fortunately, these butterflies had just begun flying, and I captured, marked, and photographed 18 males between the 9th and 11th (Figs. 1-4). In addition, several adults of the Bahamian Swallowtail (*Heraclides andraemon*) were observed, and several were netted and photographed (Figs. 5-14, see taxonomic comments below). It was found that adults of both Schaus' and Bahamian Swallowtails would, more often than not, briefly rest with their wings spread for a few moments just after being released, allowing opportunities for close-up photography. Overall, conditions were extremely dry on Elliott Key, and few butterflies other than the swallowtails were seen, the main highlights being 1-2 Mangrove Skippers (*Phocides pigmalion okeechobee*, Figs. 15-16) and 2-3 Mangrove Buckeyes (*Junonia genoveva*) each day. One Florida Purplewing (*Eunica tatila tatilista*) was seen from a distance on May 10th.

After returning to the mainland from Elliott Key, the afternoon of May 12th was spent briefly investigating sites along Card Sound Road, southeast of Homestead. Habitats consisted of dirt roads and highway margins, all of which were highly disturbed, and most were heavily littered with trash. Very few butterflies were seen. The evening of the 12th was spent in Homestead. After 3 nights on Elliott Key, I was pleasantly surprised to find that Homestead is full of great Mexican restaurants, which are almost as likely as the butterflies to bring me back to the area in the future!

The first site I visited on May 13th was Camp Oawissa Bauer. I really wanted to find the Dina Yellow (*Pyrisitia dina helios*), a South Florida specialty species; almost all of the specimens of this taxon in the McGuire Center collection originated at Camp Owaissa Bauer, so I wanted to familiarize myself with the habitats there. Fortunately, no groups were camping in the lodges, so I had the run of the place. Surprisingly few butterflies were seen, although I was lucky enough to find and photograph a few Dina Yellows (Figs. 17-18). A fresh male Large Orange Sulphur (*Phoebis agarithe maxima*, Fig. 19) also posed for close-up photos when a cloud briefly obscured the sun.

Fig. 1. *Heraclides aristodemus ponceanus*, male dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014.

Fig. 2. *Heraclides aristodemus ponceanus*, male dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 10-V-2014.

Fig. 3. *Heraclides aristodemus ponceanus*, male dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014.

Fig. 4. *Heraclides aristodemus ponceanus*, marked male ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 10-V-2014.

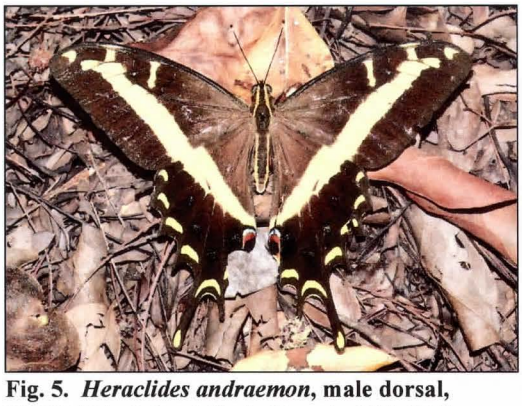

Fig. 5. *Heraclides andraemon*, male dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 9-V-2014. [Figs. 5 (dorsal) and 6 (ventral) are the same specimen.]

Fig. 6. *Heraclides andraemon*, male ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 9-V-2014. [Figs. 5 (d) and 6 (v) are the same specimen.]

Fig. 7. *Heraclides andraemon*, male dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 10-V-2014. [Figs. 7 (d) and 8 (v) are the same specimen.]

Fig. 8. *Heraclides andraemon*, male ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 10-V-2014. [Figs. 7 (d) and 8 (v) are the same specimen.]

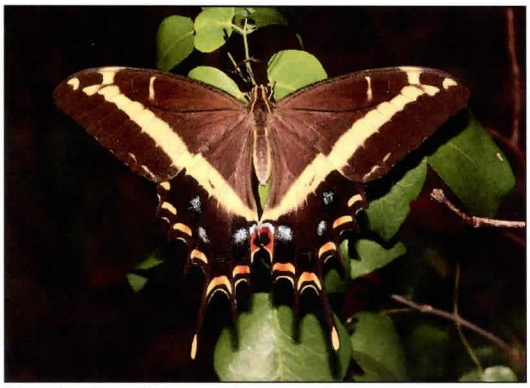

Fig. 9. *Heraclides andraemon*, female dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014. [Figs. 9 (d) and 10 (v) are the same specimen.]

Fig. 10. *Heraclides andraemon*, female ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014. [Figs. 9 (d) and 10 (v) are the same specimen.]

Fig. 11. *Heraclides andraemon*, female dorsal, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014. [Figs. 11 (d) and 12 (v) are the same specimen.]

Fig. 12. *Heraclides andraemon*, female ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014. [Figs. 11 (d) and 12 (v) are the same specimen.]

Fig. 13. *Heraclides andraemon*, female ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 9-V-2014. [Figs. 13 and 14 are the 3rd and 4th female specimens, that I couldn't get dorsal shots of.]

Fig. 14. *Heraclides andraemon*, female ventral, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 9-V-2014. [Figs. 13 and 14 are the 3rd and 4th female specimens, that I couldn't get dorsal shots of.]

Fig. 15. *Phocides pigmalion okeechobee*, male, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 10-V-2014.

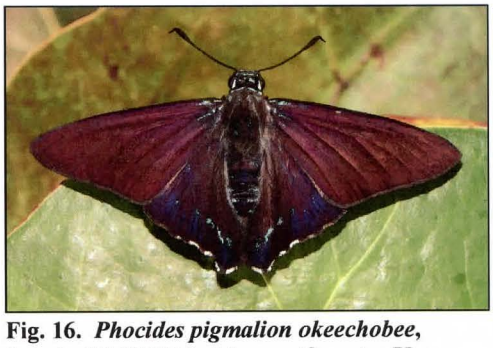

Fig. 16. *Phocides pigmalion okeechobee*, female, FLORIDA: Monroe County: Key West Tropical Forest and Botanical Garden, Stock Island, 14-V-2014.

Fig. 17. *Pyrisitia dina helios*, male, FLORIDA: Miami-Dade County: Camp Owaissa Bauer, N of Homestead, 13-V-2014.

Fig. 18. *Pyrisitia dina helios*, female, FLORIDA: Miami-Dade County: Camp Owaissa Bauer, N of Homestead, 13-V-2014.

Fig. 19. *Phoebis agarithe maxima*, male, FLORIDA: Miami-Dade County: Camp Owaissa Bauer, N of Homestead, 13-V-2014.

Fig. 20. *Electrostrymon angelia angelia*, male, FLORIDA: Miami-Dade County: Castellow Hammock Park, NE of Homestead, 13-V-2014.

Fig. 21. *Electrostrymon angelia angelia*, female, FLORIDA: Miami-Dade County: Castellow Hammock Park, NE of Homestead, 13-V-2014.

Fig. 22. *Cymaenes tripunctus tripunctus*, female, FLORIDA: Miami-Dade County: Castellow Hammock Park, NE of Homestead, 13-V-2014.

Fig. 23. *Marpesia petreus*, female dorsal, FLORIDA: Miami-Dade County: Castellow Hammock Park, NE of Homestead, 13-V-2014.

Fig. 24. *Marpesia petreus*, female ventral, FLORIDA: Miami-Dade County: Castellow Hammock Park, NE of Homestead, 13-V-2014.

After spending all morning at Camp Owaissa Bauer, I headed to Castellow Hammock Park, another site I had repeatedly seen on specimen labels. I didn't have any specific objectives here, but just wanted to get to know the habitat. Other than multiple Zebra Longwings (*Heliconius charithonia tuckeri*), only one male Dina Yellow and one male Fulvous Hairstreak (*Electrostrymon a. angelia*) were seen within the hammock. The northwest fence line of the hammock, bordering Costa Farms, was more productive, where a few Fulvous Hairstreaks were found and photographed (Figs. 20-21), together with Three-spotted Skippers (*Cymaenes t. tripunctus*, Fig. 22) and a very friendly and cooperative Ruddy Daggerwing (*Marpesia petreus*) that crawled onto my finger (Figs. 23-24).

It was almost 3:00 pm when I left Castellow Hammock, and I needed a break from the heat, so I drove down to Navy Wells Pineland Preserve, east of Homestead. The Preserve consists of some very nice-looking pineland habitat, but conditions were very dry. Essentially no nectar sources were found, thus, very few butterflies were observed, and most of those were seen from the car. After declaring the site unproductive, I decided that I probably had time for one or two more stops, so I headed to a nearby site I'd never heard mentioned before, Fuchs Hammock Preserve. This tiny preserve is located north of SW 304th St., between SW 197th and SW 202nd Ave., northwest of Homestead, and as I learned, is completely fenced off and inaccessible. Upon asking a neighbor about access to the park, he said there is no public access, and that in 15 years of living right next to the park, he had never been inside. So I headed back towards Homestead, and made one last stop at Modello Wayside Park. This is a tiny park at the southwest corner of the junction of SW 288th St. and US Hwy. 1, consisting of a lawn and about 70-80 trees sandwiched between busy streets. Fortunately, about half of the trees in the park are *Lysiloma sabicu*, and in the back (southwest) corner of the park are 5 large flowering

Fig. 25. *Aphrissa neleis*, male dorsal, FLORIDA: Miami-Dade County: Modello Wayside Park, N of Homestead, 13-V-2014.

bushes. This combination proved perfect for the Pink-Spot Sulphur (*Aphrissa neleis*, Figs. 25-26), which appears to be a breeding resident in the park. Luckily, a couple of males of the Statira Sulphur (*Aphrissa statira floridensis*, Fig. 27) were also present at the flowers, allowing for side-by-side comparison of the two similar *Aphrissa* species.

After a relatively successful day of butterfly photography the day before, and a second night of delicious Mexican food in Homestead, I headed into the Florida Keys on May 14th. The goal was to reach Key West, and see all the habitats between there and Homestead, even if it meant not stopping much along the way. The first half of the trip was very windy, with scattered rain showers, but by the time I reached Big Pine Key it was sunny. I headed straight to the nature trails just northwest of Blue Hole, and was happy to find the Florida Duskywing (*Ephyriades brunnea floridensis*) in great abundance, with several dozen adults of both

Fig. 26. *Aphrissa neleis*, male ventral, FLORIDA: Miami-Dade County: Modello Wayside Park, N of Homestead, 13-V-2014.

Fig. 27. *Aphrissa statira floridensis*, male ventral, FLORIDA: Miami-Dade County: Modello Wayside Park, N of Homestead, 13-V-2014.

sexes present, and several females ovipositing on the larval foodplant *Brysonima lucida*; various adults were surprisingly sedentary and allowed close-up photography for extended periods of time (Figs. 28-29). Few other butterflies were seen there or around Blue Hole, so I

headed on towards Key West. After a brief stop on Sugarloaf Key (only to find the northern half of the island inaccessible to me), and a quick drive along the south coast of Key West, I found my way to the Key West Tropical Forest and Botanical Garden on Stock Island. Despite the small size of the garden, it was by far the best site I had seen for butterflies during the week, with 21 species recorded in just 1.5 hours. Highlights included a fresh female Mangrove Skipper (Fig. 16), a few Hammock Skippers (*Polygonus leo histrio*, Fig. 30), numerous Monk Skippers (*Asbolis capucinus*, Fig. 31), a probable male Yellow Angled-sulphur (*Anteos maerula*), and 3 female Lyside Sulphurs (*Kricogonia lyside*, Fig. 32), one of which was ovipositing on *Guaiacum officinale*, representing a new foodplant record for Florida (see discussion below). After overstaying my welcome (I didn't notice the sign announcing the 4:00 pm closing time on my way in), I started the trip back to Homestead at about 4:40 pm, stopping only briefly at Long Key State Park, where no butterflies were seen.

Fig. 28. ***Ephyriades brunnea floridensis*****, male, FLORIDA: Monroe County: Big Pine Key, vic. Blue Hole, 14-V-2014.**

Fig. 29. ***Ephyriades brunnea floridensis*****, female, FLORIDA: Monroe County: Big Pine Key, nature trail NW of Blue Hole, 14-V-2014.**

Fig. 30. ***Polygonus leo histrio*****, male, FLORIDA: Monroe County: Key West Tropical Forest and Botanical Garden, Stock Island, 14-V-2014.**

Fig. 31. ***Asbolis capucinus*****, male, FLORIDA: Monroe County: Key West Tropical Forest and Botanical Garden, Stock Island, 14-V-2014.**

Fig. 32. ***Kricogonia lyside*****, female, FLORIDA: Monroe County: Key West Tropical Forest and Botanical Garden, Stock Island, 14-V-2014.**

Fig. 33. ***Dryas iulia largo*****, male, FLORIDA: Miami-Dade County: Elliott Key, Biscayne National Park, 11-V-2014.**

I woke up to a thunderstorm and noisy downpour on May 15th. Upon checking the weather, I realized that most, if not all of the day, would be rainy in the Homestead area, south through the Florida Keys. I therefore determined it was a good day to travel back to Gainesville after five excellent days in the field. Surely, this was not my last trip to South Florida for butterflies, but I did come away feeling somewhat discouraged by the low numbers of butterflies seen in most areas, and the paucity of remaining habitats.

Fig. 34. ***Strymon istapa modesta*****, male, FLORIDA: Monroe County: Key West Tropical Forest and Botanical Garden, Stock Island, 14-V-2014.**

Fig. 35. ***Strymon istapa modesta*****, female, FLORIDA: Miami-Dade County: Camp Owaissa Bauer, N of Homestead, 13-V-2014.**

Annotated list of butterflies observed in South Florida, May 9-14, 2014

The following list summarizes the 39 butterfly species seen at each locality visited from May 9-14, with a few notes on taxonomy and ovipositions. Taxa preceded with an asterisk (*) are considered to be South Florida specialty species; for the purposes of this note, these are species that are absent or very rare in the Gainesville, Florida area (north Florida), totaling about half (19 species) of the butterflies observed. Photos are provided for the majority of the South Florida specialty butterflies observed (Figs. 1-35). Taxonomy follows Pelham (2008) and/or Warren *et al.* (2014).

EK = Miami-Dade County: Elliott Key, Biscayne National Park, 9, 10, 11, 12 May.
CS = Miami-Dade County: Card Sound Rd., 1-10 mi SE Homestead, 12 May.
OB = Miami-Dade County: Camp Owaissa Bauer, N of Homestead, 13 May.
CH = Miami-Dade County: Castellow Hammock Park, NE of Homestead, 13 May.
NW = Miami-Dade County: Navy Wells Pineland Preserve, west of Homestead, 13 May.
MP = Miami-Dade County: Modello Wayside Park, N of Homestead, 13 May.
BP = Monroe County: Big Pine Key, Blue Hole and nature trails to NW, 14 May.
BG = Monroe County: Key West Tropical Forest and Botanical Garden, Stock Island, 14 May.

**Phocides pigmalion okeechobee* (Worthington, 1881) Mangrove Skipper
EK9-11 (1-2 males observed each day, see Fig. 15), BG (1 female photographed, Fig. 16).
**Polygonus leo histrio* Röber, 1925 Hammock Skipper
BG (3 individuals observed, 2 photographed, best is Fig. 30).
Urbanus proteus proteus (Linnaeus, 1758) Long-tailed Skipper
BG (4 males seen, 2 of which were photographed).
Urbanus dorantes dorantes (Stoll, 1790) Dorantes Longtail
BG (5 individuals seen, 1 mating pair photographed).
**Ephyriades brunnea floridensis* E. Bell & W. Comstock, 1948 Florida Duskywing
BP (very common, several dozen males (Fig. 28) and females (Fig. 29) seen and photographed; several females observed ovipositing on larval foodplant *Brysonima lucida*); BG (about a dozen males and females seen).
Pyrgus oileus (Linnaeus, 1767) Tropical Checkered-skipper
OB (2 females seen, one photographed).
**Cymaenes tripunctus tripunctus* (Herrich-Schäffer, 1865) Three-spotted Skipper
CH (4 individuals seen, 1 male and 2 females photographed, freshest female in Fig. 22), BG (1 seen).

Hylephila phyleus phyleus (Drury, 1773) Fiery Skipper
BG (6 males seen).

Polites baracoa baracoa (Lucas, 1857) Baracoa Skipper
OB (about 4 males seen on open areas, 1 photographed).

Wallengrenia otho otho (J. E. Smith, 1797) Southern Broken-dash
BG (1 female seen and photographed).

**Asbolis capucinus* (Lucas, 1857) Monk Skipper
BG (about 8 males seen, 2 photographed, freshest is Fig. 31).

Battus polydamas lucayus (Rothschild & Jordan, 1906) Polydamas Swallowtail
One seen from car near CH.

Papilio polyxenes asterius Stoll, 1782 Black Swallowtail
MP (1 male seen).

Heraclides cresphontes (Cramer, 1777) Giant Swallowtail
CH (1 fresh male seen), BG (1 or 2 individuals seen).

**Heraclides aristodemus ponceanus* (Schaus, 1911) Schaus' Swallowtail
EK9-11 (males fairly common, females scarce), 18 males captured, marked, photographed and released in 3 days, others seen and not captured; males vary from those with extensive red on the dorsal hindwing (Fig. 1), to just a trace of red (Fig. 2), to no red at all (Fig. 3); Fig. 4 shows a marked male ready for release.

**Heraclides andraemon* Hübner, [1823] Bahamian Swallowtail
EK9-11. This was the first swallowtail observed on Elliott Key on May 9th. On that day, 3 males and 5 females were seen; of those, 1 male and 3 females were netted - the male and 2 females were photographed. On May 10th, 2 males and 2 females were seen (1 male netted and photographed), and on May 11th, 1 male and 5 females were seen (2 females netted and photographed). Throughout the 1980's, Bahamian Swallowtails on Elliott Key were clearly referable to the Bahamian subspecies *H. a. bonhotei* (Sharpe, 1900), with narrower yellow wing bands and a darker overall ventral coloration, compared to other subspecies. The narrow-banded male figured by Minno & Emmel (1993) from Key Largo (personally examined) closely matches the 5 male specimens in the McGuire Center collection from Elliott Key, collected in 1988-1990. Recently, Cannon (2006) documented the Cuban subspecies *H. a. andraemon* on Big Pine Key; photographs of adults clearly show the characteristically wider yellow wing bands compared to typical *H. a. bonhotei*. Adults found on Elliott Key in 2014 are unusual in that males (Figs. 5-8) have wider bands than do typical males of *H. a. bonhotei* (Minno & Emmel 1993), considerably wider than the bands on males from Elliott Key from 1988-1990, but not as wide as those of *H. a. andraemon* documented on Big Pine Key by Cannon (2006). However, all 4 female *H. andraemon* photographed on Elliott Key in 2014 (Figs. 9-14) were comparatively narrow-banded, and are basically representative of *H. a. bonhotei*, save perhaps a somewhat yellower general ground color below. These 4 females do, though, have slightly wider bands than the single FEMALE specimen of *H. a. bonhotei* from Elliott Key in the McGuire Center collection, from 1988, which has very narrow bands. Other adults of *H. andraemon* seen but not netted on May 9-11 showed this same pattern, with comparatively wide-banded males, and narrow-banded females. The difference in band width always corresponded with the sex of the butterfly. The overall appearance of male *H. andraemon* on Elliott Key therefore appears to have changed somewhat since 1990, while the females remain more like typical *H. a. bonhotei*. It is unknown if this change in appearance is the result of intergradation with *H. a. andraemon* since 2006, or some other cause, but variation in *H. andraemon* on Elliott Key should be closely monitored in the future.

Pterourus palamedes palamedes (Drury, 1773) Palamedes Swallowtail
CS (1 seen).

Ascia monuste phileta (Fabricius, 1775) Great Southern White
EK12 (1 seen), 1 possibly seen from car north of NW.

**Anteos maerula* (Fabricius, 1775) Yellow Angled-sulphur
BG (1 male believed to be this species was seen in flight and observed for several minutes). As noted by Minno & Emmel (1993), it is unknown if this species is a regular breeding resident in Florida.

**Phoebis agarithe maxima* (Neumoegen, 1891) Large Orange Sulphur
EK9,12 (1-2 males seen each day); OB (2 males seen, 1 photographed, Fig. 19), CH (about 4 males seen), MP (1 male seen), BP (2 males seen), BG (3 males, 1 female seen, female photographed).

Phoebis philea philea (Linnaeus, 1763) Orange-barred Sulphur
BG (3 males seen in flight).

**Aphrissa statira floridensis* (Neumoegen, 1891) Statira Sulphur
MP (2 males seen at flowers, one photographed, Fig. 27).

**Aphrissa neleis* (Boisduval, 1836) Pink-spot Sulphur
MP (4 males and 1 female seen, most or all were photographed; ventral male in Fig. 26, and first known dorsal photo of living male in Fig. 25). Many large *Lysiloma sabicu* trees grow in Modello Park, and this species appears to be a breeding resident there.

**Kricogonia lyside* (Godart, 1819) Lyside Sulphur
BG (3 females seen and photographed, best in Fig. 32). One female was observed repeatedly ovipositing on Cuban Lignum Vitae (*Guaiacum officinale*); fortunately the plant had a name panel posted immediately below where the butterfly was ovipositing. According to Salvato *et al.* (2006), this represents a new larval foodplant record for Florida.

Eurema daira daira (Godart, 1819) Barred Yellow
EK9 (1 male seen), EK12 (1 male seen), CS (3 individuals seen), NW (4 seen, 1 mating pair photographed), BG (1 female seen).

**Pyrisitia dina helios* (M. Bates, 1934) Dina Yellow
OB (5 males and 3 females seen, 1 male (Fig. 17) and 1 female (Fig. 18) photographed), CH (1 male seen within hammock, 1 male seen along SW 157th Ave, on the east side of the park).

Nathalis iole iole Boisduval, 1836 Dainty Sulphur
EK9 (1 male seen), EK12 (1 male seen), CS (2 males seen), OB (4-5 seen on lawn near entrance to camp).

**Electrostrymon angelia angelia* (Hewitson, 1874) Fulvous Hairstreak
CH (4 males and 1 female seen and most were photographed, the freshest male in Fig. 20 and the female in Fig. 21); BG (2 females seen, 1 photographed).

**Strymon istapa modesta* (Maynard, 1873) Mallow Scrub-hairstreak
OB (1 male and 1 female seen, the female photographed (Fig. 35); BG (1 male seen and photographed, Fig. 34).

Leptotes cassius theonus (Lucas, 1857) Cassius Blue
EK9-12 (many individuals seen each day), OB (about 8 seen), CH (about 8 seen, 1 male photographed), MP (1 female seen and photographed), BP (about 2 dozen adults seen around Blue Hole), BG (over 2 dozen adults seen, 1 mating pair photographed). This was the most abundant and widespread butterfly observed during the week.

Hemiargus ceraunus antibubastus Hübner, [1818] Ceraunus Blue
OB (about 4 males and 3 females seen, mainly on lawn near camp entrance).

Danaus plexippus plexippus (Linnaeus, 1758) Monarch
BG (3 seen, remained in garden all afternoon).

Agraulis vanillae nigrior Michener, 1942 Gulf Fritillary
CS (1 seen), OB (3 seen), CH (2 seen), NW (1 seen), BG (8 seen).

**Dryas iulia largo* Clench, 1975 Julia
EK9-11 (1 to 2 dozen adults seen each day, 1 male photographed on May 11th, Fig. 33), OB (1 female seen).

Heliconius charithonia tuckeri W. Comstock & F. Brown, 1950 Zebra Longwing
EK9 (2 males seen), OB (3 seen), CH (15 seen), BG (10 seen).

**Eunica tatila tatilista* Kaye, 1926 Florida Purplewing
EK10 (1 seen from a distance).

**Marpesia petreus* (Cramer, 1776) (Northern segregate) Ruddy Daggerwing
OB (2 females seen and photographed), CH (1 female photographed, Figs. 23-24).

Anartia jatrophae guantanamo Munroe, 1942 White Peacock
CS (4 seen), OB (8 seen, mainly flying over the lawn), CH (1 seen).

**Junonia genoveva* (Cramer, 1780) (Caribbean segregate) Mangrove Buckeye
EK9-11 (2-3 males seen each day).

Acknowledgements

I think Jaret Daniels for inviting me to participate in the 2014 Schaus' Swallowtail survey on Elliott Key, funded by the National Park Service, the United States Fish and Wildlife Service, and the Minnesota Zoo's Ulysses S. Seal Conservation Grant Program. Big thanks to the staff of Biscayne National Park for providing housing on Elliott Key and transportation to and from the island. Thanks also to John Calhoun for literature and his detailed review of this article, and Jon Pelham for discussions.

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GAYLE THOMAS STRICKLAND
6 October 1931 - 13 October 2012

For many years we knew Gayle Strickland as a most fastidious collector and preparer of small micro-moths, mainly from his home state of Louisiana. Many specimens he donated to the FSCA (Florida State Collection of Arthropods), which Lepidoptera are now all housed at McGuire Center, in Gainesville. From 1972-76, Gayle donated 3,588 Lepidoptera to the FSCA, as tabulated when I was still on staff for Lepidoptera at the FSCA. He did not visit Gainesville as far as I know, so I did not meet him although our former curator, Howard V. Weems, Jr. (now deceased), surely knew him, but his specimens are still valued additions to the collections here. It may be that he concentrated on Odonata after 1976, as we did not hear from him after that in terms of Lepidoptera.

In later years, Gayle switched his main interest in insects to Odonata, so it is that notes below are taken mainly from his obituary presented in a recent issue of *Argia* (24(4):9), the odonate newsletter in North America, in turn taken from the *Advocate* newspaper of Baton Rouge. He was born in Napoleonville, LA, but grew up in Centreville, MS, where his father transferred for work. Gayle attended Mississippi Southern Universigy, for his B.S. degree, and received an M.S. from Tulane University. His work was as a research chemist at Ethyl Corp. and Georgia Gulf. He and his wife Jeanell Strickland had two daughters, now living in Virginia and Louisiana, and one son now living in Virginia. His wife remains at their home in Baton Rouge. He had several hobbies, including telescopes, tennis, photography, and bird watching, besides other nature activities, including Odonata and Lepidoptera.

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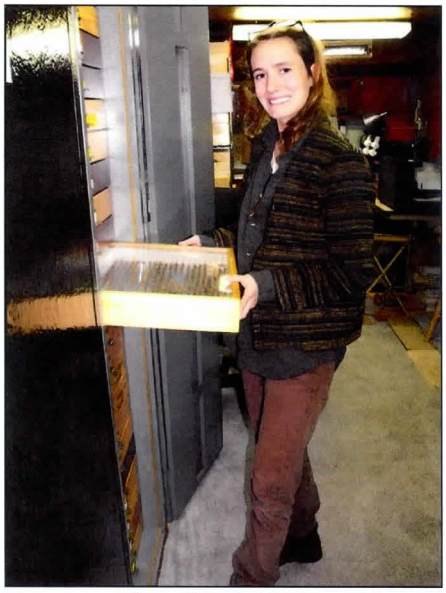
SOME SAD NEWS THAT IS A BIT LATE
JANICE MARKS

The wife of Ferrel Marks, and the mother of Craig Marks died on September 1, 2013. The members of the Southern Lepidopterists' Society extend their sincerest condolences to her husband, Ferrel, and her son Craig, and the grandchildren.

VISITING VERNON & CHARLOTTE BROU AT ABITA SPRINGS, LOUISIANA



Brooke Bullock

Brooke Bullock in collection storage January 11, 2014. Brooke is a student at Loyola University, New Orleans, working on a proposed lepidoptera project, and visiting the research collection of Vernon & Charlotte Brou.

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CRAPE MYRTLE IN BATON ROUGE

Crape Myrtle in Baton Rouge, LA, in the fall of 2013. (Photo by Gary N. Ross.)

Gary Ross sends in this photo (right) with the following comments.

"The photo is a shot of a small twig of a crape myrtle during this past fall. The photo is from below, using the sky as backdrop. This past fall in Baton Rouge, I could not find a single crape myrtle in full fall color for a needed photo. Turns out crape myrtles throughout my entire area dropped most of their leaves during early fall, apparently due to a very wet summer. So, by the time late fall arrived, the trees were almost nude with no leaves to turn and drop. Disappointed and in dire need of a fall photo, I had to settle for close-ups of a composite of fallen leaves and individual colorful branches."

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REMINDER AND CALL FOR PAPERS

FALL MEETING OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY AND THE ASSOCIATION FOR TROPICAL LEPIDOPTERA, 26-28, SEPTEMBER 2014

The Annual Meeting is scheduled for 26-28 September, 2014, and will be hosted in the McGuire Center for Lepidoptera and Biodiversity Conference Room, at the Florida Museum of Natural History, University of Florida. The McGuire Center is located adjacent to Powell Hall on the University of Florida campus and can be accessed directly off 34th St. and Hull Road.

The tentative schedule will include day and night field trips on Friday, 26 September. Formal paper sessions and business meetings will be take place on Saturday and Sunday morning. The banquet will be held on Saturday evening at starting at 6:30 pm. This is the 10th Anniversary of the opening of the McGuire Center for Lepidoptera and Biodiversity. There will be some special speakers on the program to celebrate this event. Registration forms and a tentative schedule for these meetings will be available on the SLS and ATL websites on or before 1 August 2014. Now is the time to get into the field, make some observations, do some research, and think about presenting a paper or poster at these meetings! If you already have a talk in mind and want to let us know your plans please send us your title and abstract via email to Jacqueline Y. Miller (jmiller@flmnh.ufl.edu) or Debbie Matthews (dlott@flmnh.ufl.edu). We look forward to seeing you in Gainesville!

A COMPARISON OF THE MOTH COMMUNITIES OF FORESTED, GLADE, AND URBAN HABITATS IN BIBB AND JEFFERSON COUNTIES, ALABAMA

BY

PETER A. VAN ZANDT [1], JOHN-PAUL TORTORICH [1], AISHA BONDS [1], GRANT GENTRY [2], AND RICHARD L. BROWN [3]

INTRODUCTION

To those unfamiliar with the state, Alabama is surprising in its biological diversity. Alabama ranks 5th in the U.S. for overall biological diversity, and 1st east of the Mississippi River (Stein, 2002). The state also ranks high (#7 in the U.S.) in the number of endemic species, with 144 species that occur nowhere else in the world. Much of this biodiversity is due to high numbers of aquatic species, but the diversity of terrestrial organisms is also very rich. In addition, terrestrial plants show considerable biodiversity, placing Alabama as #9 in the US, and #3 of eastern states (Stein, 2002).

One particularly diverse part of the state is in Bibb County, which is the home of the Bibb County Glades Preserve (hereafter referred to as the Glades). The Glades are a series about 40 rocky openings that total approximately 250 acres. These treeless areas are surrounded by a matrix of dry upland forest, for a total of 480 acres of habitat protected by The Nature Conservancy of Alabama (http://www.nature.org/wherewework/northamerica/states/alabama/preserves/art902.html). Because Glades often exhibit very stressful abiotic conditions such as thin, nutrient-poor soils, high irradiance, and extremes in temperature, these habitats limit plant productivity (Baskin and Baskin, 2000; Garland, 2008). Glades typically contain endemic or relict species typical of hotter and drier conditions of deserts or dry prairies (Baskin and Baskin, 2000), and the Bibb Co. Glades are no exception. They are home to eight endemic species and subspecies of vascular plants that have been recently described as well as 44 rare vascular plants, the latter as formally recognized by the Alabama Natural Heritage Program (Allison and Stephens, 2001). It is likely that no other area of the U.S. has had more new taxa of plants described from a single habitat of such restricted area in the last century.

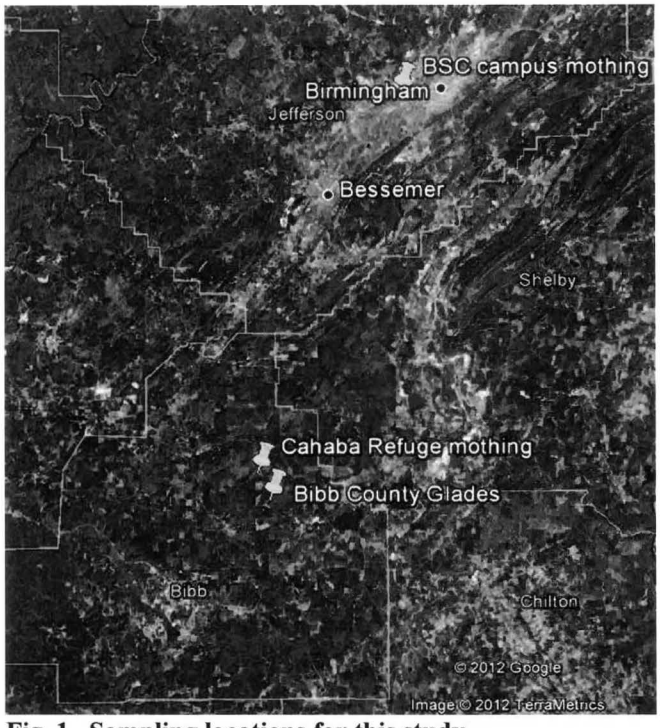


Fig. 1. Sampling locations for this study.

The Cahaba River National Wildlife Refuge (hereafter referred to as the Refuge) is only 3.5 km from the Bibb Co. Glades (Fig. 1), but is very different in many respects. At over 3,414 acres, the refuge contains 12 different natural plant associations within several different plant community types including river habitats, dry upland forests, and bottomland hardwood forests (Schotz, 2007). The Refuge has 12 rare species of terrestrial plants (Schotz, 2007) and a total diversity of plants that has yet to be determined. The diversity of both of these preserved areas is at least partially due to their location at the boundary between the Southern Ridge and Valley and East Gulf Coastal Plain physiographic regions. Although these sites have historically experienced substantial disturbance through logging and mining activities, the variety of habitats have made Bibb County a biodiversity hotspot for plants as well as other terrestrial and aquatic taxa. Together, the Glades and Refuge help preserve what is thought of as the most species rich portion of a very diverse state (Stein, 2002; Schotz, 2007; Garland, 2008).

Although considerable information is known of the diversity of plants, vertebrates, mussels, and crayfish of Bibb County, very little is known about the diversity of moths. Indeed, the moths of the southeastern U.S. are poorly studied overall (Brown, 2003), but the Lepidoptera of Alabama are especially understudied, even in comparison to other southeastern states (*e.g.*, Schweitzer *et al.*, 2011). However, this lack of knowledge of moths belies their vital roles in

communities. Here and elsewhere, they serve important roles as selective herbivores, detritus feeders, and pollinators (Scoble, 1992; Summerville and Crist, 2004). Moths are also important sources of food for predators such as songbirds, which can consume over half of the caterpillars in a forest during nestling and fledgling periods (Holmes *et al.*, 1979). Moths can also be useful indicators of overall insect biodiversity, forest disturbance, and habitat quality (Summerville *et al.*, 2004; Summerville *et al.*, 2005).

While many caterpillars are generalist herbivores, a majority are much more specialized and feed on selected species in a single genera or family of plant (Scoble, 1992; Wagner, 2005; Scholtens and Wagner, 2007). Therefore, given the high amount of plant diversity and endemism of these areas, moths should show a pattern of high diversity and rare species similar to the highly diverse groups mentioned above. Moreover, because many species have specific host or habitat requirements, one might expect that the community of moths associated with the Glades should be considerably different than the nearby forested habitat of the Refuge. If forested sites have differing plant species, then one would expect that the communities of moths in these sites should be relatively unique. Alternatively, the moth communities in adjacent sites could be fairly similar, given that many moths are vagile and widespread.

We evaluated these two hypotheses by comparing the moth diversity and community identity of each of the rural sites in Bibb County to each other and to the community of moths in a 16 acre urban woodlot on Birmingham-Southern College's campus. At approximately 16 acres, the Birmingham-Southern College Ecoscape forest (hereafter referred to as the Campus site) is considerably smaller than both of the Bibb Co. sites. The Campus habitat is isolated and surrounded by urban developments, including a college campus and residential neighborhoods, although the forest itself has been undisturbed for over 100 years. This moist upland forest is relatively diverse for its size, containing at least 100 species of plants. Comparing these rural plots in Bibb Co. to this urban site is important because our knowledge of urban woodlots for maintaining moth diversity in North America is scarce (Summerville and Crist, 2008).

METHODS

Collection

We sampled moths using black light bucket traps, which consisted of a 15-watt black light powered by a motorcycle battery. We placed one trap per site in all three locations on the same night, which allowed us to minimize confounding effects of variable weather and moon phases across nights. Sampling trips were conducted approximately every 10-20 days at all three sites from May 7th to October 27th, 2011. We sampled only on rain-free, low-wind nights without a bright moon to maximize capture of the most species (Butler *et al.*, 1999). Equipment and time constraints prevented us from sampling more extensively from these sites. Each trap was collected the following morning, and all individuals were frozen for later sorting, identification, and curation.

Family	Species
Bombycidae	2
Cossidae	1
Erebidae	103
Euteliidae	2
Geometridae	64
Lasiocampidae	3
Limacodidae	11
Megalopygidae	3
Noctuidae	71
Nolidae	2
Notodontidae	21
Saturniidae	8
Sesiidae	1
Sphingidae	10
Yponomeutidae	3
Zygaenidae	1
Total	**306**

Table 1. The families of moths examined in this study, along with the number of species per family that were observed during 10 weeks of sampling.

For this study, we focused on 16 families, comprised mostly of macrolepidoptera, but including some of the larger microlepidopteran species that could be readily identified without dissection (Table 1). We selected a representative series of individuals from each known species or unique, unidentified species (*i.e.*, morphotype) for pinning, spreading, and labeling for preservation and later identification. These samples were compared to the synoptic collection at Birmingham-Southern College and the collection of the Mississippi Entomological Museum (MEM) at Mississippi State University for identification.

Analysis

Moth species richness was used to represent community biodiversity among our three sites. We used EstimateS (Colwell, 2013) to generate species accumulation curves for our 10 samples and estimate the total species richness in each habitat. We compared total richness for each site using paired t-tests (SPSS, 2010) using species numbers observed per night at each site as paired replicates. We generated Jaccard's index with EstimateS to quantify the faunal similarity of the three sites. We were interested in whether there were more pest species in the urban site,

so we determined pest status by searching literature (Cranshaw, 2004) and web pages (USDA-APHIS, 2000) for species that exhibit unwanted and large damage to stored products, landscaping plants, fruit or nut trees, vegetables, and other cultivated crops. Species whose host plants were largely listed as crops were also categorized as pests for this analysis. Finally, host plants were categorized based on published literature (Wagner, 2005; Wagner *et al.*, 2011) and web pages (Robinson *et al.*, 2010; BugGuide.Net, 2013). We used our 10 sample nights as replicates to compare the three sites in percentage of pest species and percentage of species using different host plant types as categorized above using ANOVA (SPSS, 2010).

RESULTS AND DISCUSSION

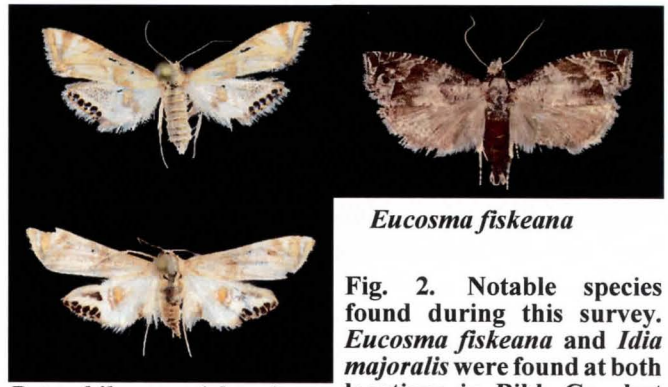
In total, we collected and identified 1856 specimens comprising 306 species in 16 families (Table 1, Appendix 1). The two rural sites had higher numbers of both observed and estimated numbers of species than the urban site (Table 2). Typically, more diverse forest habitats support a greater number of moth species, as do habitats that are less disturbed (Summerville and Crist, 2004, 2008). Therefore, we should expect a considerable number of species in Bibb County due to the high diversity of plant species that occur there. Previous studies have indicated that habitat size can be a good predictor of the number of moth species (Summerville *et al.*, 2005), especially for tree-feeding moth species (Summerville and Crist, 2004). Therefore, it isn't surprising that the total number of moth species was similar between the Glades and Refuge because these sampling locations are surrounded by comparable amounts of forested area. The estimated number of species at all of these locations is likely to be much lower than the actual number of species to be found there. When conducting moth surveys, it may take well more than a hundred sample nights to inventory even 90% of the species in an area (Powell, 1995), which suggests that these results are severe underestimates of the full moth diversity of these habitats. Additional sampling techniques and several years of sampling (*e.g.*, Brown and Bash, 1997; Scholtens and Wagner, 2007) would also lead to better estimates of species numbers at these locations.

Site	Observed species	Estimated species	Unique species (% of total)
Campus	112	200	40 (35%)
Refuge	206	298	73 (35%)
Glade	184	317	50 (27%)

Table 2. Actual and estimated numbers of species occurring at the sites in this study. Estimated species numbers are asymptotes of species accumulation curves based on 10 samplng events at each site. Unique species were those that were only found at one site and neither of the others, and the % total represents the percentage of the number of observed species found at that site that were unique to that site.

There were several species that were unique to each of the sites, and these unique species consistently represented approximately 1/3 of the total species found at each site (Table 2). This finding suggests that sites do have unique combinations of species, even when they are close together. This result is consistent with other studies that find plant identity and diversity to be an important factor in determining lepidopteran diversity (Summerville and Crist, 2002; Shuey *et al.*, 2012). Interestingly, the one location with highest plant endemism (the Glade) had the lowest percentage of unique species. It is worth noting, however, that the unique species in this comparison include common species like *Manduca sexta* (found only at the Campus site) as well as less common species like *Cydosia aurivitta*, which was only found at the Glade sampling location (Fig. 2). Members of the Mississippi Entomological Museum (MEM) sampled for six nights in the Bibb County Glades during 2003 – 2004 (Appendix 1). They found approximately 481 species of moths plus unidentified morphotypes (far higher than even our projections), at least four of which are considered rare or uncommon (*e.g.*, Martinez and Brown, 2007). Researchers from MEM also surveyed Tennessee glade habitats (Brown, 2003) and found 18 species of moths that were regionally rare, uncommon or state record species. All of these results indicate that glade habitats may house many endemic or relict species and should be surveyed more thoroughly.

Idia majoralis ***Cydosia aurivitta***



Eucosma fiskeana

***Petrophila* n. sp. (above)**
***Petrophila bifascialis* (below)**

Fig. 2. Notable species found during this survey. *Eucosma fiskeana* and *Idia majoralis* were found at both locations in Bibb Co., but *Petrophila* n. sp. and *Cydosia aurivitta* were found only at the Glade site.

We were expecting to find a greater number of interesting or uncommon species than we did during our survey. Some of the notable species are microlepidoptera, but they still deserve a brief mention here. *Eucosma fiskeana* (Tortricidae) is uncommonly found, but exhibits a broad range from Illinois to Ohio south to Texas and Florida (Moth Photographers Group, 2014). Most records suggest that this species is associated with open habitats like glades and remnant prairies. *Cydosia aurivitta* (Noctuidae) is generally uncommon outside Texas, but was found on several occasions in the Glades, where only the melanic form was collected. This species is possibly a relict in scattered glades east of Texas in similar arid habitats like glades. However, James Adams (personal communication) reports collecting it from open understory areas in Georgia and Northern Alabama, so it may be associated with habitats other than glades and barrens. *Petrophila* n. sp. (Crambidae) is an undescribed species that is common at Bibb County Glades near the Cahaba River and which is similar to *P. bifascialis*. While little is known about its distribution, the larvae are likely to be aquatic, similar to its sister species. Finally, *Idia majoralis* (Erebidae) is associated with woodrat nests (which are rare over much of their range, especially in NE USA). *Idia majoralis* is not exclusive to woodrats and is found widely throughout its southern range.

	Campus	Refuge	Glade
Campus	-	24.9	26.9
Refuge	11 (4%)	-	45.2
Glade	10 (3%)	67 (22%)	-

Table 3. Similarity comparisons for the sites in this study. Numbers below the diagonal represent the species shared between the two sites listed, and the number in parentheses represents the percentage of the number of observed species found at only those two sites. Numbers above the diagonal are the Jaccard index, or the percentage of faunal similarity between two sites.

According to Schweitzer *et al.* (2011), this is possibly a case of false rarity as it has a widespread distribution, though it is found in small numbers where it occurs.

Overall, the two adjacent sites (Refuge and Glade) shared a higher number of species in common and had a greater faunal similarity than sites with more similar habitats and plant communities (*i.e.*, the Refuge and Campus sites; Table 3). This suggests that proximity of sites is more important for determining the make-up of a moth community than is habitat type. However, our limited number of samples and replicate sites prevents us from being too confident in this conclusion.

One goal of this study was to search for patterns in the commonness of pest species. Our initial conjecture was that the Campus site would have a greater number of herbaceous pest species, given the relatively high level of disturbed and cultivated habitats surrounding this forest site. Consistent with this expectation, we found that there was a higher average percentage of pests found at the Campus location on each trapping event (Fig. 3). This is not merely because there was a lower number of total species at the Campus site, because there was also a greater absolute number of pests per

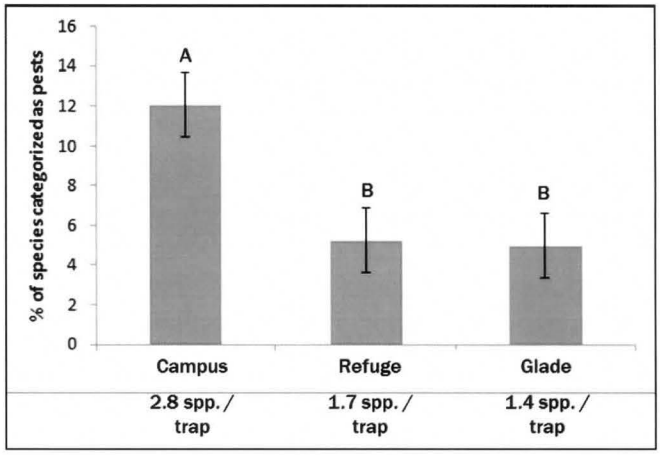


Fig. 3. The average percentage of pest species captured during each trap night. Bars with different letters are statistically different from each other (overall $P = 0.006$, $F_2 = 6.18$). The numbers below the figure repesent the average number of individual pests captured per trap on each night.

trap night at this location (Fig. 3). Similarly, there were also higher total counts of pest species (17 from Campus, 12 from the Refuge, and 10 from the Glade summed over all 10 trapping events). The Birmingham area is largely developed, with only a few urban farm lots, so these results are also not due to a spillover effect from surrounding agricultural areas. Because these pests are not just herbaceous species, but also comprise a number of generalist tree feeding species as well (*e.g.*, Fig. 4), it appears that a higher abundance of pests in the urban site is not merely because of a higher abundance of disturbed and cultivated habitats. Given the consistent pattern for herbaceous and woody feeders, there could be more than one causative factor, including higher plant diversity because of cultivation and higher import rates due to commerce (McKinney, 2008).

We were also interested in trying to find trends in the moth communities based on associations with their food sources. When comparing host associations across the three sites, we can see some interesting trends (Fig. 5). The Refuge site has a lower percentage of grass and herbaceous plant feeding caterpillars, which makes sense

because the Glade and Campus sites have fewer trees near the collection locations. Because the Glades are open habitats filled with grasses and herbs, it is understandable that they have the lowest percentage of woody feeding moths. There was a significantly higher proportion of species that consume both herbaceous and

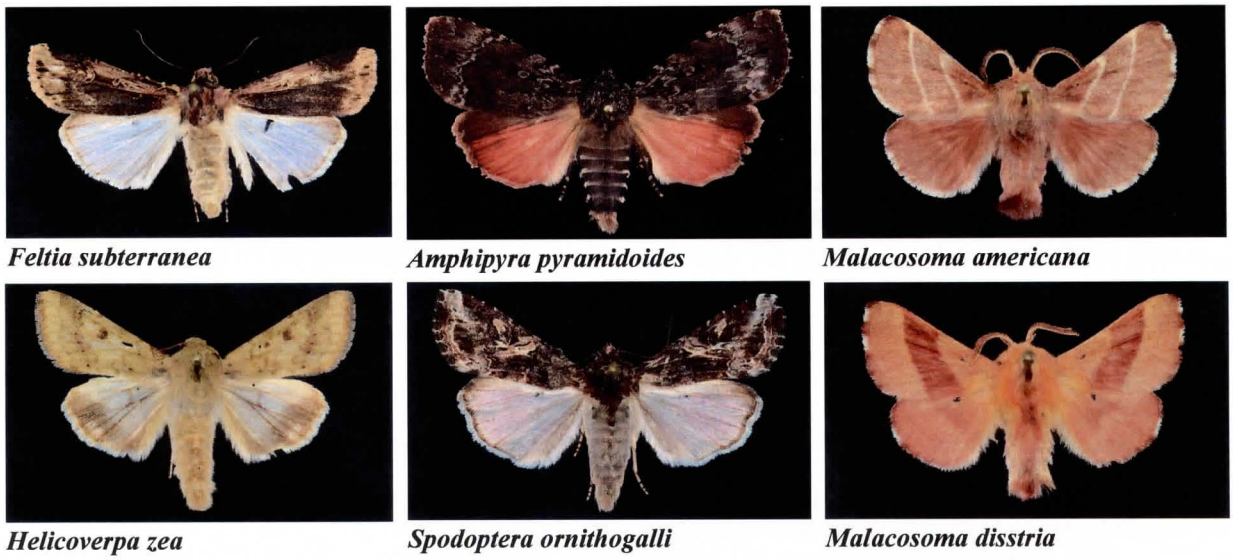


Fig. 4. Representative examples of pest species most commonly collected during this study. *Feltia, Helicoverpa*, and *Spodoptera* are all herbaceous feeders (mostly crop pests), but *Amphipyra* and the two species of *Malacosoma* are tree feeders.

woody hosts at the Campus site (Fig. 5). This may partially explain the previous patterns, since a higher number of generalist herbivores could lead to higher numbers of pests. Finally, the urban Campus site had a smaller proportion of species that fed from the "other" category, which consisted of lichen, fungus, and detritus feeders. The loss of these guilds may be indicative of degraded urban environments, but further sampling will be necessary to confirm that this pattern is robust.

As biodiversity hotspots, the Bibb county Glades and the Cahaba River NWR are still vastly understudied, and a greater knowledge of the species present in these regions is desperately needed. Additional surveys have the potential to bring additional attention to species of concern of these areas and to help Refuge or Nature Conservancy managers with decisions such as increasing the preservation of additional important habitats.

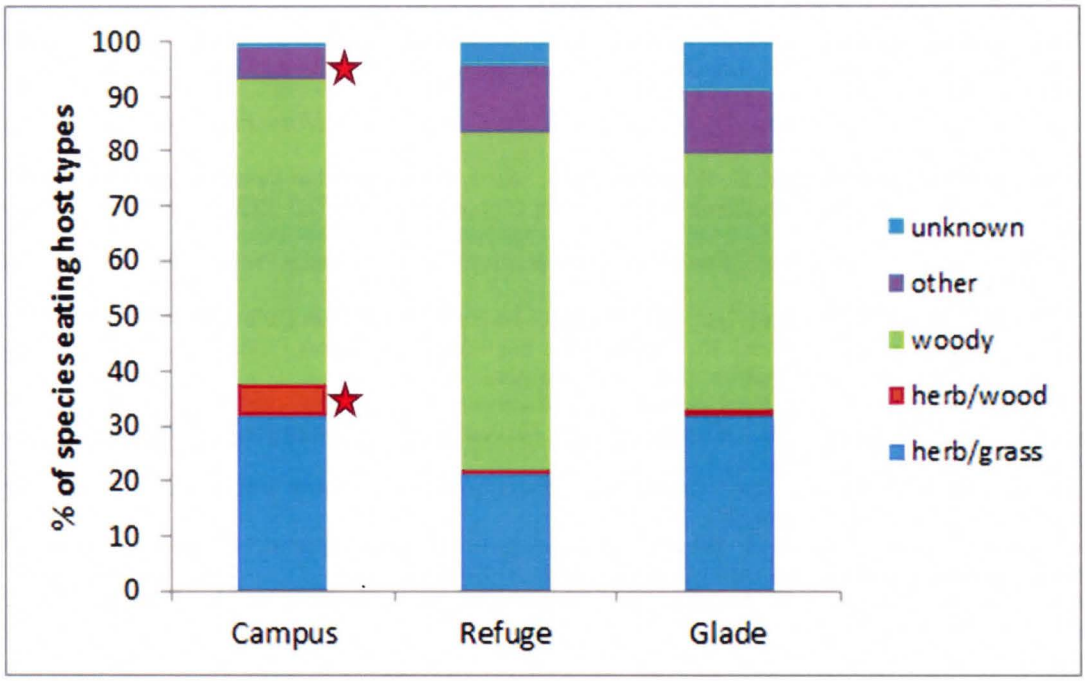


Fig. 5. The percentage of species that are associated with different types of hosts. From the bottom to top in each column, the categtories are: species that consume either herbaceous or grass plants, species that consume either herbaceous or woody plants, specialists on woody plants, species that utilize other hosts not in the previous categories (*e.g.*, lichen, fungi), and species whose host plant associations are unknown. The stars indicate categories that are statistically different among sampling locations (P<0.05).

ACKNOWLEDGEMENTS

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Appendix 1. List of species collected in Bibb and Jefferson Counties, Alabama, by Peter Van Zandt (PVZ) and group, including urban woodlot on Birmingham-Southern College campus (C), Cabaha River National Wildlife Refuge (R), and Bibb County Glades Preserve (G). For species collected in Bibb County Glades by Mississippi Entomological Museum (MEM): 1 = 33°03'28"N,87°02'21"W, 2 = 33°03'26"N,87°02'02"W, 3 = 33°03'35"N,87°02'12"W, 4 = 33°03'34"N,87°02'06"W.

Taxa	PVZ	MEM
Apatelodidae		
Apatelodes torrefacta (J.E. Sm.)	R	
Olceclostera angelica (Grt.)	R G	
Argyresthiidae		
Zelleria retiniella Fbs.	R G	
Attevidae		
Atteva aurea aurea (Fitch)	C G	1, 2
Autostichidae		
Glyphidocera juniperella Adamski		3
Glyphidocera lactiflosella (Cham.)		1, 3
Spinitibia hodgesi Lee & Brown		1
Taygete attributella (Wlk.)		2
Blastobasidae		
Blastobasis glandulella (Riley)		3
Calosima spp.		1, 2
Hypatopa spp.		3
Bucculatricidae		
Bucculatrix magnella Cham.		1, 2, 3
Bucculatrix sp.		2, 3
Choreutidae		
Tebenna carduiella (Kft.)		3
Coleophoridae		
Coleophora spp.		1, 2, 3
Cosmopterigidae		
Cosmopterix abdita Hodges		3
Cosmopterix dapifera Hodges		1, 3
Cosmopterix pulchrimella Cham.		3
Ithome sp.		3
Melanocinclis lineigera Hodges		1, 2, 3
Periploca sp.		1, 2
Teladoma sp.		1
Triclonella determinatella (Zell.)		1, 2, 3
Cossidae		
Cossula magnifica (Stkr.)	R	
Crambidae		
Aethiophysa invisalis (Gn.)		2
Apogeshna stenialis (Gn.)		1
Arequipa turbatella Wlk.		2
Argyria rufisignella (Zell.)		1, 2
Chrysendeton medicinalis (Grt.)		1, 2
Crambus agitatellus Clem.		1
Crambus laqueatellus Clem.		1, 2
Crambus saltuellus Zell.		2
Desmia funeralis (Hbn.)		1, 2
Diacme elealis (Wlk.)		1, 2, 3
Diasemiodes janassialis (Wlk.)		1, 2, 3, 4
Diatraea evanescens Dyar		2
Dioryctria clarioralis (Wlk.)		1
Elophila icciusalis (Wlk.)		3
Elophila obliteralis (Wlk.)		1, 3
Eoparargyractis irroratalis (Dyar)		4
Eoparargyractis sp.		1, 3
Eudonia strigalis (Dyar)		1, 2, 3
Fissicrambus profanellus (Wlk.)		1
Glaphyria sequistrialis Hbn.		1, 2
Haimbachia placidella (B. & McD.)		1
Herpetogramma aeglealis (Wlk.)		1
Herpetogramma fluctuosalis (Led.)		3
Herpetogramma thestealis (Wlk.)		3
Hileithia magualis (Gn.)		1, 2, 3
Hymenia perspectalis (Hbn.)		1
Hypsopygia olinalis (Gn.)		1
Macrotheca sp.		2
Microcrambus elegans (Clem.)		1, 2, 3
Microtheoris ophionalis (Wlk.)		2, 3
Neodactria caliginosella (Clem.)		1, 2, 3
Neodactria sp.		3
Nomophila nearctica Mun.		2, 3
Ostrinia obumbratalis (Led.)		3
Ostrinia penitalis (Grt.)		1
Palpita freemanalis Mun.		1, 3
Palpita magniferalis (Wlk.)		1, 2
Palpita quadristigmalis (Gn.)		3
Parapediasia decorella (Zinck.)		1
Parapediasia decorella (Zinck.)		2
Parapoynx allionealis Wlk.		4
Perispasta caeculalis Zell.		1, 2
Petrophila bifascialis (Rob.)		2
Petrophila fulicalis (Clem.)		4
Petrophila n.sp.		4
Pleuroptya silicalis (Gn.)		1
Polygrammodes flavidalis (Gn.)		3
Pyrausta acrionalis (Wlk.)		3
Pyrausta bicoloralis (Gn.)		1, 3
Pyrausta inveterascalis B. &McD.		2
Pyrausta onythesalis (Wlk.)		1
Samea baccatalis (Hulst)		1, 3
Saucrobotys futilalis (Led.)		1
Scoparia basalis gp.		1, 2, 3
Spoladea recurvalis (F.)		3
Stegea eripalis (Grt.)		2
Udea rubigalis (Gn.)		1, 3
Urola nivalis (Drury)		2
Xanthophysa psychialis (Hulst)		1, 3
Drepanidae		
Drepana arcuata Wlk.		1
Oreta rosea (Wlk.)		1, 3
Elachistidae		
Antaeotricha schlaegeri (Zell.)		1, 2
Antaeotricha unipunctella (Clem.)		1, 2, 3
Antaeotricha vestalis (Zell.)		2, 3, 4
Eupragia hospita Hodges		1, 2
Psilocorsis cryptolechiella (Cham.)		3
Psilocorsis reflexella Clem.		1, 3
Erebidae — Arctiinae		
Apantesis phalerata (Harr.)	R	
Apantesis sp.		
Cisseps fulvicollis (Hbn.)		1
Cisthene packardii (Grt.)	R G	1, 2, 3

Taxa	PVZ	MEM
Cisthene plumbea Stretch	R G	3
Clemensia albata Pack.	R G	1, 2, 3
Crambidia uniformis Dyar	G	1, 2, 3
Euchaetes egle (Drury)		2
Euerythra phasma Harv.	R	2
Grammia parthenice (Kby.)	R G	
Halysidota tessellaris (J.E. Sm.)	C R G	1, 2, 3
Haploa clymene (Brown)	C R	2, 3
Hyphantria cunea (Dru.)	C G	
Hypoprepia fucosa Hbn.	R G	2
Leucanopsis longa (Grt.)	G	1
Pagara simplex Wlk.		3
Pyrrharctia isabella (J.E. Sm.)	C	
Spilosoma congrua Wlk.	C R G	
Spilosoma virginica (F.)	G	3
Utetheisa ornatrix (L.)		2
Virbia aurantiaca (Hbn.)	R G	2, 3
Virbia ferruginosa (Wlk.)	G	
Virbia immaculata (Reakirt)	R G	
Virbia opella (Grt.)	R G	
Erebidae — Lymantriinae		
Dasychira atrivenosa (Palm)	R	3
Dasychira basiflava (Pack.)	G	
Dasychira meridionalis (B. & McD.)	R	
Dasychira tephra Hbn.	R	
Orgyia definita Pack.	G	2, 3
Orgyia leucostigma (J.E. Sm.)	R G	2, 3
Erebidae — other subfamilies		
Arugisa latiorella (Wlk.)		1, 2
Bleptina caradrinalis Gn.		1, 2, 3
Caenurgia chloropha (Wlk.)	C R G	3
Catocala amica (Hbn.)	C R	
Catocala amestris (Streck.)	C	
Catocala andromedae Gn.	R G	1, 3
Catocala connubialis Gn.	G	
Catocala dejecta Stkr.	C	
Catocala epione (Drury)	G	2
Catocala grynea (Cram.)	G	
Catocala ilia (Cram.)	R	
Catocala micronympha Gn.	R	1, 2, 3
Catocala minuta Edw.	G	
Catocala mira Grt.	C	
Catocala miranda (Grt.)	G	
Catocala muliercula Gn.	G	
Catocala n.sp. nr. amica	R G	
Catocala orba Kusnezov	R	
Catocala robinsonii Grt.	G	
Catocala ultronia (Hbn.)	C G	
Catocala vidua (J.E. Sm.)	G	
Celiptera frustulum Gn.	C R G	
Colobochyla interpuncta (Grt.)	R G	
Colocasia flavicornis (Sm.)	R G	
Condica mobilis (Wlk.)	G	
Condica sutor (Gn.)	C	
Condica videns (Gn.)	R G	
Cosmia calami (Harv.)	G	
Drasteria grandirena (Haw.)		3
Neadysgonia smithii (Gn.)	R	
Dyspyralis illocata Warr.		4
Dyspyralis puncticosta (Sm.)	R	
Hemeroplanis habitalis (Wlk.)	G	3
Hemeroplanis scopulepes (Haw.)	R G	1, 2
Hypena baltimoralis (Gn.)	R	
Hypena bijugalis (Wlk.)		2
Hypena madefactalis Gn.		2
Hypena manalis (Wlk.)		1
Hypena palparia (Wlk.)	R G	1, 2
Hypena scabra (F.)	C R G	
Hypenodes fractilinea (Sm.)		1, 3
Hyperstrotia aetheria (Grt.)		1
Hyperstrotia flaviguttata (Grt.)		3
Hyperstrotia pervertens (B. & McD.)	R G	
Hyperstrotia secta (Grt.)		1
Hyperstrotia villificans (B. & McD.)	R G	1, 2
Hypsoropha hormos Hbn.	C R	1
Idia aemula Hbn.	C R G	1, 2, 3
Idia americalis (Gn.)	C R G	1, 2, 3
Idia forbesii (French)	R	
Idia julia (B. & McD.)	C R G	
Idia lubricalis (Gey.)		3
Idia majoralis (Sm.)	R G	3
Idia rotundalis (Wlk.)	R G	
Idia scobialis (Grt.)	R G	
Isogona tenuis (Grt.)	C G	
Lascoria ambigualis Wlk.	R	2
Lesmone detrahens (Wlk.)	G	1, 2
Leucania adjuta (Grt.)		
Leucania spp.	R G	1, 3
Macrochilo hypocritalis Fgn.	R	2
Metalectra discalis (Grt.)	R G	1
Metalectra richardsi Brower	R G	3
Mocis texana (Morr.)	R	
Nigetia formosalis Wlk.	R	3
Ogdoconta cinereola (Gn.)	C R G	
Oruza albocostaliata (Pack.)	R	
Oxycilla mitographa (Grt.)		3
Ozarba aeria (Grt.)		2
Ozarba nebula B. & McD.	G	
Palthis angulalis (Hbn.)	C	1, 3
Palthis asopialis (Gn.)		2, 3
Pangrapta decoralis Hbn.	R G	2
Panopoda carneicosta Gn.	C G	1, 3
Panopoda rufimargo (Hbn.)		3
Parallelia bistriaris Hbn.	C	1
Phyprosopus callitrichoides Grt.	C R G	1
Phytometra ernestinana (Blanch.)		3
Phytometra rhodarialis (Wlk.)	R G	1, 2, 3
Ptichodis herbarum (Gn.)	R G	2, 3
Redectis pygmaea (Grt.)		3
Redectis vitrea (Grt.)		1
Renia adspergillus (Bosc)	R	
Renia discoloralis Gn.	C R G	
Renia fraternalis Sm.	R G	2
Renia sobrialis (Wlk.)	C	
Schrankia macula (Druce)	R G	2, 4
Scolecocampa liburna (Gey.)	R G	2
Spiloloma lunilinea Grt.	R	
Tetanolita floridana (Sm.)	G	3
Tetanolita mynesalis (Wlk.)	C R	2, 3
Tripudia rectangula Pogue	C	1, 2, 3
Zale confusa (Hbn.)	G	
Zale galbanata (Morr.)	R	1, 3
Zale helata gp.	C R	
Zale obliqua Gn.	C R G	
Zanclognatha atrilineella (Grt.)		2
Zanclognatha lituralis (Hbn.)	R G	1
Zanclognatha theralis (Wlk.)		1
Eutelidae		
Marathyssa inficita (Wlk.)	G	3
Paectes abrostoloides (Gn.)	C R G	
Paectes oculatrix (Gn.)		1

Taxa	PVZ	MEM
Gelechiidae		
Agnippe prunifoliella (Cham.)		1
Anacampsis conclusella (Wlk.)		1
Anacampsis coverdalella Kft.		1, 3
Anacampsis rhoifructella (Clem.)		1
Aristotelia corallina Wlsm.		2
Aristotelia pudibundella (Zell.)		1, 2, 3
Aristotelia roseosuffusella (Clem.)		1, 2
Aristotelia rubidella (Clem.)		1, 2, 3
Battaristis nigratomella (Clem.)		3, 4
Chionodes bicostomaculella (Cham.)		1, 2
Chionodes cacula Hodges		1, 2
Chionodes discoocellella (Cham.)		3
Chionodes emptor Hodges		2
Chionodes mediofuscella (Clem.)		1
Chionodes suasor Hodges		2
Coleotechnites canusella (Free.)		2
Coleotechnites obliquistrigella (Cham.)		1, 2, 3
Deltophora glandiferella (Zell.)		1, 2, 3
Deltophora sella (Cham.)		1, 2
Dichomeris costarufoella (Cham.)		2, 3
Dichomeris flavocostella (Clem.)		2
Dichomeris georgiella (Wlk.)		1, 2
Dichomeris inversella (Zell.)		2, 3
Dichomeris ligulella Hbn.		1, 3
Dichomeris vacciniella Busck		1
Dichomeris ventrellus (Fitch)		1, 2, 3
Exoteleia anomala Hodges		1, 2
Exoteleia pinifoliella gp.		1, 2
Fascista cercerisella (Cham.)		1, 3
Glauce pectenalaeella Cham.		1, 2
Isophrictis spp.		2, 3, 4
Monochroa sp.		2
Polyhymno luteostrigella Cham.		2, 3
Pseudotelphusa sp.		1, 2, 3
Pubitelphusa latifasciella (Cham.)		2
Stegasta bosqueella (Cham.)		1, 2, 3
Untomia albistrigella (Cham.)		1, 3
Geometridae		
Anavitrinella pampinaria (Gn.)	C R G	1, 2, 3
Antepione thisoaria (Gn.)	R G	
Besma quercivoraria (Gn.)		1
Costaconvexa centrostrigaria (Woll.)	C R	
Cyclophora myrtaria (Gn.)		1
Cyclophora packardi (Prt.)	C	
Cymatophora approximaria Hbn.	R G	
Dichorda iridaria (Gn.)	R G	
Digrammia continuata (Wlk.)	G	
Digrammia gnophosaria Gn.		1
Disclisioprocta stellata (Gn.)	C	
Dyspteris abortivaria (H.-S.)	G	2
Ecliptopera atricolorata (G. & R.)	G	
Ectropis crepuscularia ([D. & S.])	R	
Ennomis subsignaria (Hbn.)	C	
Epimecis hortaria (F.)	R G	
Ertastria cruentaria (Hbn.)	C R G	
Euacidalia sericearia Pack.	R	
Euchlaena amoenaria (Gn.)	R	1, 2
Euchlaena deductaria (Wlk.)	R G	
Euchlaena obtusaria (Hbn.)	R	
Eulithis diversilineata (Hbn.)	R G	
Eulithis gracilineata (Gn.)	C R G	
Eupithecia miserulata Grt.	C	1, 2
Eupithecia spp.	C R G	
Eusarca confusaria Hbn.	R G	
Eutrapela clemataria (J.E. Sm.)	C R G	
Exelis pyrolaria Gn.		1
Glena plumosaria (Pack.)	R G	1
Glenoides texanaria (Hulst)	R G	1, 2, 3
Horisme intestinata Gn.		3
Hypagyrtis esther (Barnes)	C R G	2
Hypagyrtis unipunctata (Haw.)	C R G	
Hypomecis umbrosaria	G	
Idaea demissaria (Hbn.)	R G	2, 3
Idaea eremiata (Hlst.)		
Idaea furciferata (Pack.)	R G	1, 2
Idaea obfusaria (Wlk.)	R G	1, 2
Idaea tacturata (Wlk.)	C R G	1, 2
Idaea violacearia (Wlk.)	R G	1, 2, 3
Iridopsis defectaria (Wlk.)	C R G	1, 3
Iridopsis vellivolata (Hulst)	R G	2, 3
Lambdina pultaria (Gn.)		2, 3
Lobocleta ossularia (Gey.)	G	3
Lobocleta peralbata (Pack.)		1
Lomographa vestaliata (Gn.)	R G	1, 2, 3
Lophosis labeculata (Hulst)	R	1
Lytrosis unitaria (H.-S.)	R G	
Lytrosis sp.	R	
Macaria aemulataria Wlk.	R	1
Macaria bicolorata (F.)	C R G	1, 2
Macaria multilineata Pack.	R G	1, 2, 3
Macaria promiscuata (Fgn.)	R	1, 2
Macaria transitaria (Wlk.)	R G	2
Melanolophia canadaria (Gn.)	C R G	3
Metarranthis homuraria (G. & R.)	R	1
Nematocampa resistaria (H.-S.)	C R G	
Nemoria bistriaria Hbn.		1, 3
Nemoria lixaria (Gn.)	R	2, 3
Nemoria saturiba Fgn.	R G	1
Nemoria sp.	G	
Nepytia semiclusaria (Wlk.)	C R G	1
Patalene olyzonaria (Wlk.)	C R G	1, 2, 3
Pimaphera sparsaria (Wlk.)		3
Plagodis fervidaria (H.-S.)	G	1
Pleuroprucha insulsaria (Gn.)	C G	1, 2, 3
Plusiodonta compressipalpis Gn.	C R G	
Probole alienaria H.-S.	R	3
Probole amicaria (H.-S.)	R	
Prochoerodes lineola (Goeze)	C R G	2, 3
Protoboarmia porcelaria (Gn.)	R	1, 2
Rheumaptera prunivorata Fgn.		1, 2
Scopula limboundata (Haw.)	C R G	1, 3
Scopula ordinata (Wlk.)		3
Speranza pustularia (Gn.)	G	
Synchlora frondaria Gn.		1, 3
Synchlora sp.	G	
Timandra amaturaria (Wlk.)		1
Tornos scolopacinaria (Gn.)		2
Gracillariidae		
Caloptilia belfrageella (Cham.)		1, 3
Caloptilia violacella (Clem.)		1
Cameraria sp.		3
Mamara sp.		1, 2, 3
Neurobathra strigifinitella (Clem.)		1, 2
Parectopa robiniella Clem.		3
Phyllocnistis insignis F. & B.		3
Heliodinidae		
Cycloplasis panicifoliella Clem.		3

Taxa	PVZ	MEM
Lasiocampidae		
Artace cribraria (Ljungh)		3
Malacosoma americana (F.)	C R G	
Malacosoma disstria Hbn.	C R G	
Tolype notialis Franc.	C R G	3
Limacodidae		
Adoneta spinuloides (H.-S.)	R	
Apoda biguttata (Pack.)		3
Apoda y-inversum (Pack.)	R G	
Euclea delphinii (Bdv.)	G	
Isa textula (H.-S.)	C	
Isochactes beutenmuelleri (Hy. Edw.)	R	2, 3
Lithacodes fasciola (H.-S.)	C R G	1, 2
Monoleuca semifascia (Wlk.)	G	
Natada nasoni (Grt.)	C G	
Packardia geminata (Pack.)		2
Parasa chloris (H.-S.)	R	
Phobetron pithecium (J.E. Sm.)	R	1
Prolimacodes badia (Hbn.)	C	1, 2
Tortricidia testacea Pack.		1
Megalopygidae		
Megalopyge crispata (Pack.)	G	
Megalopyge opercularis (J.E. Sm.)	G	1
Norape ovina (Sepp)	R	
Momphidae		
Mompha circumscriptella (Zell.)		3
Mompha eloisella (Clem.)		1
Noctuidae		
Abagrotis alternata (Grt.)	C	
Achatodes zeae (Harr.)		2
Acronicta afflicta Grt.	C	3
Acronicta americana (Harr.)	R	3
Acronicta clarescens Gn.		2
Acronicta hasta Gn.		1, 2, 3
Acronicta impleta Wlk.	C	3
Acronicta inclara - increta gp.	C R	1, 2, 3
Acronicta interrupta Gn.		3
Acronicta laetifica Sm.		2, 3
Acronicta lobeliae Gn.	C	3
Acronicta modica Wlk.		1
Acronicta noctivaga Grt.	C	
Acronicta retardata (Wlk.)	G	
Acronicta rubricoma Gn.	C	1
Acronicta vinnula (Grt.)	G	2, 3
Agnorisma badinodis (Grt.)	R	
Agrotis gladiaria Morr.	R	
Agrotis ipsilon Hufn.	C R	
Agrotis malefida Gn.	C	
Agrotis venerabilis Wlk.	G	
Allotria elonympha (Hbn.)	C R G	
Amolita roseola Sm.		2, 3
Amphipyra pyramidoides Gn.	C R	
Anicla infecta (Ochs.)	C R G	3
Argyrogramma verruca (F.)	R	
Argyrostrotis anilis (Dru.)	C R G	
Arugisa latiorella (Wlk.)	R G	
Arugisa lutea (Sm.)	R	
Azenia obtusa (H.-S.)	R G	1, 3
Bagisara rectifascia (Grt.)		1, 2
Baileya ophthalmica (Gn.)	R G	
Balsa labecula (Grt.)	R	
Bleptina caradrinalis Gn.	R	
Caenurgia chloropha (Hbn.)	C R G	
Callopistria cordata (Ljungh)		1, 2
Callopistria mollissima (Gn.)	R G	
Charadra deridens (Gn.)		3
Chaetaglaea sericea (Morr.)	C	
Choephora fungorum G. & R.	G	
Chytolita morbidalis Gn.		2
Chytonix palliatricula (Gn.)	R G	1, 2
Condica sutor (Gn.)		1, 3
Condica videns (Gn.)		1, 2, 3
Cosmia calami (Harv.)		2
Ctenoplusia oxygramma (Gey.)		3
Cydosia aurivitta G. & R.	R G	1
Dypterygia patina (Haw.)		3
Elaphria chalcedonia (Hbn.)		1, 3
Elaphria festivoides (Gn.)	R	
Elaphria grata Hbn.	C R G	2
Elaphria versicolor (Grt.)	R	1, 3
Ellida caniplaga (Wlk.)	G	1, 3
Eublemma minima (Gn.)		1
Feltia subterranea (F.)	C G	
Galgula partita Gn.	C R G	1, 3
Harrisimemna trisignata (Wlk.)	C	1
Helicoverpa zea (Boddie)	R G	
Homophoberia apicosa (Haw.)	G	3
Iodopepla u-album (Gn.)	G	2
Lacinipolia implicata McD.	C	
Leucania sp.		1, 3
Marimatha nigrofimbria (Gn.)	C R G	1, 2, 3
Mythimna unipuncta (Haw.)	C R G	
Noctua pronuba (L.)	C	
Ogdoconta cinereola (Gn.)		3
Orthodes cynica Gn.		2
Orthodes goodelli (Grt.)		3
Orthodes majuscula (H.-S.)	R	1
Perigea xanthioides Gn.		1, 3
Phlogophora periculosa Gn.	R	
Phosphila miselioides (Gn.)	C R G	2
Polygrammate hebraeicum (Hbn.)	C R G	1, 3
Ponometia candefacta (Hbn.)		
Protodeltote muscosula (Gn.)	R	
Rachiplusia ou (Gn.)	C	2
Raphia abrupta Grt.		1, 2
Schinia arcigera (Gn.)	G	
Spodoptera dolichos (F.)	C	
Spodoptera frugiperda (J.E. Sm.)	C	
Spodoptera latifascia (Wlk.)	C	2
Spodoptera ornithogalli (Gn.)	C R G	2, 3
Spragueia apicalis (H.-S.)		3
Spragueia dama (Gn.)	C	
Spragueia leo (Gn.)	R	3
Sunira bicolorago (Gn.)	C R	
Sympista kappa (Grt.)		1, 2
Tarache aprica (Hbn.)	C	
Tricholita signata (Wlk.)	C	
Xestia dilucida (Morr.)	C	
Xestia elimata (Gn.)	C	
Nolidae		
Baileya arcadiana Brou		1, 3
Baileya australis (Grt.)		3
Baileya ophthalmica (Gn.)		1, 2
Meganola minuscula (Zell.)	R	
Meganola phylla (Dyar)	R	1, 2, 3
Meganola spodia Franc.		
Nola cereella (Bosc)		1, 3
Nola cilicoides (Grt.)		3

Taxa	PVZ	MEM
Nola pustulata (Wlk.)		1
Notodontidae		
Clostera inclusa (Hbn.)		3
Dashylophia anguina (J.E. Sm.)	R	
Datana angusii G. & R.	R G	3
Datana integerrima G. & R.	R	3
Datana major G. & R.		1
Datana ministra (Drury)		3
Datana spp.	C R G	3
Furcula borealis (Guér.)		1
Heterocampa biundata Wlk.	R G	
Heterocampa guttivitta (Wlk.)	C R G	3
Heterocampa obliqua Pack.	C R G	
Heterocampa umbrata Wlk.	R	3
Hyperaeschra georgica (H.-S.)	C R	2, 3
Lochmaeus bilineata (Pack.)	C R G	1, 2, 3
Lochmaeus manteo Dbdy.	C	3
Macrurocampa marthesia (Cram.)	C R G	
Misogada unicolor (Pack.)	R	1
Nadata gibbosa (J.E. Sm.)	C R G	1, 3
Nerice bidentata Wlk.	R	3
Oligocentria lignicolor (Wlk.)		1
Peridea angulosa	R G	
Peridea basitriens (Wlk.)	R G	3
Schizura ipomoeae Dbdy.	R G	
Schizura leptinoides (Grt.)	C	3
Schizura unicornis (J.E. Sm.)		2
Symmerista albifrons (J.E. Sm.)	C R G	3
Oecophoridae		
Decantha boreasella (Cham.)		1
Epicallima argenticinctella Clem.		1, 2, 3
Inga cretacea (Zell.)		3
Inga sparsiciliella (Clem.)		3
Opostegidae		
Pseudopostega sp.		1
Plutellidae		
Plutella xylostella (L.)		3
Prodoxidae		
Prodoxus quinquepunctella (Cham.)		1
Tegeticula yuccasella (Riley)		1
Pterophoridae		
Pselnophorus belfragei (Fish)		1, 2, 3
Stenoptilia pallistriga (B. & McD.)		3
Pyralidae		
Acrobasis caryae Grt.		2, 3
Acrobasis demotella Grt.		1
Acrobasis ostryella Ely		2, 3
Acrobasis stigmella Dyar		3
Adelphia petrella (Zell.)		2, 3
Arta sp.		3
Atrix sp.		2
Cabnia myronella Dyar		1
Canarsia ulmiarrosorella (Clem.)		2, 3
Dioryctria amatella (Hulst)		2
Dioryctria disclusa Heinr.		2
Ephestia columbiella Neunzig		1
Ephestiodes infimella Rag.		2
Eulogia ochrifrontella (Zell.)		1
Eurythmia hospitella (Zell.)		3
Euzophera ostricolorella (Hulst)		2
Euzophera semifuneralis (Wlk.)		1
Glyptocera consobrinella (Zell.)		2, 3
Homoeosoma electellum (Hulst)		1
Immyrla nigrovittella Dyar		2
Laetilia sp.		1, 2
Macrorrhinia endonephele (Hamp.)		1
Parachma ochracealis Wlk.		2, 3
Peoria approximella (Wlk.)		1, 2
Pococera asperatella (Clem.)		3
Quasisalebria atratella (Blanch. & Kn.)		2
Salebriaria carolynae Neunzig		2, 3
Salebriaria fasciata Neunzig		2
Salebriaria rufimaculatella Neunzig		2
Salebriaria turpidella (Rag.)		1
Sciota subfuscella (Rag.)		1, 2
Sciota uvinella (Rag.)		2
Tampa dimediatella Rag.		3
Tosale oviplagalis (Wlk.)		1, 2
Tulsa finitella (Wlk.)		1, 2
Varneria postremella Dyar		1, 2, 3
Saturniidae		
Actias luna (L.)	R G	2
Anisota stigma (F.)	R G	3
Anisota virginiensis (Dru.)	R	
Antheraea polyphemus (Cram.)	R G	3
Automeris io (F.)	R G	2
Callosamia angulifera (Wlk.)	R	
Callosamia promethea (Drury)		1
Dryocampa rubicunda (F.)	R	3
Eacles imperialis (Drury)	R G	2, 3
Sesiidae		
Synanthedon acerni (Clem.)		1
Synanthedon exitiosa (Say)	C	
Sphingidae		
Agrius cingulata (F.)	G	
Amorpha juglandis (J.E. Sm.)	C G	1
Ceratomia catalpae (Bdv.)	G	1, 2, 3
Ceratomia undulosa (Wlk.)		2
Darapsa choerilus (Cram.)	R	1
Darapsa myron (Cram.)	G	
Eumorpha pandorus (Hbn.)	G	
Lapara coniferarum (J.E. Sm.)	R G	3
Manduca sexta (L.)	C	
Paonias excaecata (J.E. Sm.)	R G	3
Paonias myops (J.E. Sm.)	G	1
Paratrea plebeja (F.)		2
Thyrididae		
Thyris maculata Harr.		3
Tineidae		
Acrolophus arcanella (Clem.)		1, 2, 3
Acrolophus mycetophagus Davis		1
Acrolophus plumifrontella (Clem.)		2
Acrolophus popeanella (Clem.)		3
Diachorisia velatella Clem.		2, 3
Homosetia n. sp.		1
n. gen. n. sp.		3
Tinea apicimaculella Cham.		1, 2, 3
Tinea unomaculella Cham.		2, 3
Tischeriidae		
Tisheria sp.		1, 3

Taxa	PVZ	MEM
Tortricidae — Olethreutinae		
Ancylis burgessiana (Zell.)		1
Ancylis comptana (Frröl.)		1, 3
Ancylis n. sp.		2
Bactra verutana Zell.		2, 3
Corticivora parva Brown		1, 2
Cydia caryana (Fitch)		3
Cydia latiferreana (Wlsm.)		1, 2, 3
Cydia rana (Fbs.)		2, 3
Ecdytolopha punctidiscana (Dyar)		1
Endothenia hebesana (Wlk.)		1, 2, 3
Epiblema "minutana" (Kft.)		1, 2
Epiblema brightonana (Kft.)		2
Epiblema strenuana (Wlk.)		1
Episimus argutana (Clem.)		1, 3
Episimus tyrius Heinr.		1
Eucosma fiskeana Kft.		3
Eucosma matutina (Grt.)		1
Eucosma robinsonana (Grt.)		1
Eumarozia malachitana (Zell.)		1, 3
Gretchena concitatricana (Heinr.)		2
Olethreutes fasciatana (Clem.)		1, 2
Olethreutes ferriferana (Wlk.)		1
Olethreutes inornatana (Clem.)		1, 2
Paralobesia viteana (Clem.)		3
Pelochrista pallidipalpana (Kft.)		1, 3
Pelochrista scintillana (Clem.)		1, 2, 3
Phaecasiophora niveiguttana Grt.		1, 3
Phaneta awemeana (Kft.)		3
Proteoteras naracana Kft.		1, 2
Pseudogalleria inimicella (Zell.)		1
Retinia houseri (Miller)		1
Retinia taedana (Miller)		1
Rhyacionia frustrana (Comst.)		1, 2, 3
Satronia tantilla Heinr.		2
Sonia paraplesiana Blanch.		3
Zomaria interruptolineana (Fern.)		3
Tortricidae — Tortricinae		
Archips georgiana (Wlk.)		1, 2
Archips infumatana (Zell.)		2
Archips rileyana (Grt.)		1, 2
Argyrotaenia floridana Obr.		1, 2, 3
Argyrotaenia quercifoliana (Fitch)		1, 2
Argyrotaenia velutinana (Wlk.)		2, 3
Carolella sartana (Hbn.)		1
Cenopis diluticostana (Wlsm.)		1
Cenopis directana (Wlk.)		1, 2
Cenopis ferreana (Bsk.)		1
Cenopis niveana (Wlsm.)		1
Cenopis saracana Kft.		1
Choristoneura rosaceana (Harr.)		1, 2, 3
Clepsis peritana (Clem.)		2
Cochylis sp.		1, 2, 3
Pandemis limitata (Rob.)		1
Platynota exasperatana (Zell.)		1, 2
Platynota flavedana Clem.		1
Platynota idaeusalis (Wlk.)		1
Platynota rostrana (Wlk.)		1, 2
Recavicula sp.		1, 2, 3
Sparganothis caryae (Rob.)		1
Sparganothis sulfureana (Clem.)		1, 2, 3
Yponomeutidae		
Lactura pupula (Hbn.)		1, 2
Yponomeuta multipunctella Clem.	R	
Zelleria retiniella Fbs.		1, 2
Zygaenidae		
Harrisina americana (Guér.)	R	1

(Peter A. Van Zandt[1], John-Paul Tortorich[1], Aisha Bonds[1], Grant Gentry[2], and Richard L. Brown[3]
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THE SOCIETY OF KENTUCKY LEPIDOPTERISTS
ANNUAL MEETING: 40TH ANNIVERSARY

The meeting will be at the University of Kentucky, Lexington, KY., Friday and Saturday November 14 & 15. We will meet in the Insect Museum in the Dimock Animal Pathology Building. There will be the "Gathering of Lepiodpterists" on Friday evening. This is the 40th Anniversary of the Society. Dr. Covell will be attending and he will present a talk on the history of our Society. The University of Kentucky Insect collection will be open for viewing. For additional information visit the Society's website: http://www.kylepidopterists.org

The Society of Kentucky Lepidopterists is open to anyone with an interest in the Lepidoptera of the Great State of Kentucky. We are a very active organization. We have two or three field meetings every year. Annual dues are $15.00

To join the Society of Kentucky Lepidopterists, send dues to:

Les Ferge
7119 Hubbard Ave.
Middleton, WI 53562
Email: lesferge@gmail.com

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REPORTS OF STATE COORDINATORS

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

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

Mack sends in the following short report from David Rupe:

Melittia cucurbitae, Prairie Grove, Washington Co., AR, 10 - June - 2014. Was observed resting on a squash leaf in garden.

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

Charlie sends in the following report: The butterfly story in much of Florida has been, so far this year, disturbingly depauperate of butterflies. I make this statement based on my observations around Gainesville, including our yard, where only 8 species have been recorded to date. Others have noted a similar dearth. By contrast, last year at this date (June 5) I had recorded 15 species – about "normal." I am not alone in the assessment: Kathy Malone, a regular butterfly observer, agrees that numbers have been much lower than usual. The only answer that seems to explain the situation around Gainesville is that late winter-early spring cold snaps may have killed off a major portion of the butterflies at a critical time in their development.

Here are the species seen in the Covell yard as of this date:

1. *Heliconius charithonia*	January 5, 2 nectaring on Pentas in back yard
2. *Phoebis sennae*	January 5, flying across back yard
3. *Vanessa atalanta*	March 9, flying in our back yard
4. *Abaeis nicippe*	March 15, flying in front yard
5. *Epargyreus clarus*	March 29, flying and lighting in front yard
6. *Atlides halesus*	April 4, nectaring high in Viburnum tree
7. *Libytheana carinenta*	April 6, resting on driveway
8. *Erynnis horatius*	May 15, nectaring on Lantana

In addition to the above species, here are butterflies recorded by me in Gainesville, overall so far this year. Except for *H. phyleus* on the golf course, all of these have been scarce.

Erynnis horatius, H. phyleus, Pyrgus oileus, P. polyxenes asterius, P. glaucus, P. palamedes, Limenitis archippus, Junonia coenia, Vanessa atalanta, Vanessa virginiensis, Parasitia lisa, Danaus plexippus (not seen until late May!).

April 28, with John and RuthAnn Peacock from Ohio, at the Lower Suwanee WMA in Levy Co., the following were recorded: *Eurytides marcellus* and *Phoebis sennae* along the roadside in Alachua Co., and the following in Levy Co. before the Lower Suwanee turnoff: *Papilio palamedes, Ascia monuste,* and *Agraulis vanillae.* Along Shell Mound Road in Lower Suwanee we recorded: *Oligoria maculata, Anatrytone delaware, Panoquina ocola, Papilio palamedes, Papilio glaucus, Calephelis virginiensis, Phyciodes phaon* (common), and *Limenitis. archippus.* Pickerel weed was plentiful and blooming, but we saw only *A. vanillae* on it..

From May into June Jaret Daniels and his survey colleagues report that Schaus Swallowtails (*Papilio aristodemus ponceanus*) have been more plentiful than recent in some recent years, and *Papilio andraemon bonhotei* has been recorded. The Florida Purplewing, *Eunica tatila tatilista,* has been seeen in good numbers in the upper Keys. He will give a detailed report for the next issue.

Also in the Keys on May 31 Barbara Woodmansee and friends were looking unsuccessfully for Schaus Swallowtails on Key Largo. They recorded several other species: *Ephyriades brunnea, E. tatila tatilista, Dryas iulia, Electrostrymon angelia, Leptotes cassius.* The group later went on to Big Pine Key where they observed *Chlorostrymon maesites* on Jamaica Dogwood, and also *Strymon acis bartrami, Leptotes cassius* and *Electrostrymon angelia.*

Kathy Malone says that the only species she has observed in near normal numbers so far this year are *Hermeuptychia sosybius.*

Three interesting Sphingidae were reported. On May 11 Bob Belmont collected a *Darapsa versicolor* in a trap at the Central Florida Zoo, Sanford. Rick Gillmore reported a dead female *Erinnyis obscura* in a pool enclosure at Oviedo, Seminole Co., and also a male *Eumorpha fasciata* inside the pool enclosure on May 22. The former is unusual in being found in urban areas but not in the wild areas Rick visits.

He has also collected Sesiidae at pheromone sticky traps at his home in the Orlando area, and so far has taken *S. sapygaeformis, S. pictipes, P. springae, C. texana, P. stimulans palmii, S. rubrofascia* and one each of *P. dolli* and *S. geliformis.*

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

The contributors include James Adams (JKA or no notation) and Irving Finkelstein (ILF). 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 known new STATE and COUNTY records are indicated, and all dates listed below are 2014 unless otherwise specified.

Rocky Face Ridgeline, Just SW of Dalton, Whitfield Co., with Patrick Adams:

May 4-5:

LIMACODIDAE: *Packardia* sp., near *albipunctata* (2 specimens, male and female; forewing completely dark with paired white spots near anal angle). **EREBIDAE**: *Metria amella.* **NOCTUIDAE**: *Acronicta longa, Callopistria cordata.*

June 8-9:

LIMACODIDAE: *Lithacodes fasciola, Natada nasoni, Euclea delphinii* (very small), *E. nanina* (quite large). **GEOMETRIDAE**: *Macaria multilineata, Antepione thisoaria, Eulithis explanata, E. atricolorata.* **EREBIDAE**: *Euchaetes egle, Idia lubricalis, Hemeroplanes scopulepes, Catocala andromedae, C. ilia, C. grynea, C. sordida, C. micronympha.* **NOCTUIDAE**: *Rachiplusia ou, Pseudeva purpurigera* (second in STATE and from same location as first), *Achatodes zeae.*

Carbondale, I-75 exit 326, Whitfield Co.:
EUTELIIDAE: *Eutelia pulcherrima*, April 23 & 24. **NOCTUIDAE**: *Acronicta funeralis*, May 28.

Calhoun (my house), Gordon Co.:
EREBIDAE: *Gondysia smithii*, April 21; *Zale horrida*, April 22. **NOCTUIDAE**: **GEOMETRIDAE**: *Tornos scolopacinarius*, March 29; *Erastria cruentaria*, April 20.

Crockford-Pigeon Mountain WMA, 8 mi. WSW of LaFayette, Walker Co., with Patrick Adams and ILF:
April 5:
PIERIDAE: strong flight of *Pieris virginiensis* (and little else of note)
April 19:
PIERIDAE: *Pieris virginiensis* still flying. **LYCAENIDAE**: *Parhassius m-album*. **GEOMETRIDAE**: an explosion of *Trichodezia albovittata*.

Taylor's Ridge, 5 mi. W of Villanow, Walker Co., May 24-25, with Patrick Adams:
TINEIDAE: *Scardia amurensis*. **GEOMETRIDAE**: an explosion of *Euchlaena irraria, Lytrosis permagnaria*. **EREBIDAE**: *Spilosoma latipennis, Grammia anna* (common, including 2 females with all black hindwings), *G. figurata, Hypsoropha monilis* (LATE). **NOCTUIDAE**: *Agriopodes fallax, Apamea nigrior* (COUNTY, second in STATE), *A. vulgaris*.

Salacoa Rd. at Salacoa Creek, 5 mi. ESE of Fairmount, NE Bartow Co., May 25-26:
GEOMETRIDAE: *Metarranthis homuraria, M. amyrissaria*. **EREBIDAE**: *Calyptra canadensis*. **NOCTUIDAE**: *Acronicta betulae, Ozarba aeria, Bagisara repanda, Argillophora furcilla, Apamea vulgaris*.

Ohoopee Dunes habitat, 1 mi. E of Ohoopee River, .9 mi. N of Hwy. 152 along Handy Kennedy Rd., Tattnall Co., May 7-8, with ILF:
TORTRICIDAE: *Eucosma robinsonana*. **LIMACODIDAE**: *Isa textula, Lithacodes fasciola*. **ZYGAENIDAE**: *Harrissina americana*. **CRAMBIDAE**: *Munroessa gyralis, Elophila icciusalis, Glapyria sequestralis, Pyrausta ornythialis, Palpita magniferalis, Desmia funeralis, Conchloides ovulalis, Anageshna stenialis*. **PYRALIDAE**: *Dolichomia olinalis, Parachma ochracealis*. **GEOMETRIDAE**: *Macaria bicolorata, Ectropis crepuscularia, Protoboarmia porcellaria, Anavitrinella pampinaria, Iridopsis defectaria, I. vellivolata, Hypomecis umbrosaria, Hypomecis* sp. (dark), *Hypagyrtis unipunctata, H. esther, Epimecis hortaria, Tornos scolopacinarius, Lomographa vestaliata, Episemasia solitaria, Euchlaena obtusaria, E. madusaria, E. amoenaria, Eutrapela clemataria, Tetracis cachexiata, Eusarca confusaria, Nemoria lixaria, N. bistriaria, Idaea tacturata, Lophosis labeculata, Costaconvexa centrostrigaria, Eupithecia miserulata*. **SATURNIIDAE**: *Automeris io*. **LASIOCAMPIDAE**: *Malacosoma americana*. **BOMBYCIDAE**: *Apatelodes torrefacta, Olceclostera angelica*. **SPHINGIDAE**: *Darapsa myron*. **NOTODONTIDAE**: *Nadata gibbosa, Heterocampa guttivitta, H. umbrata, Peridea angulosa*. **EREBIDAE**: *Orgyia definita, Hypoprepia fucosa, Cisthene subjecta, Virbia laeta, V. opella, V. rubicundaria, Hyphantria cunea, Halysidota tessellaris, Idia americalis, I. aemula, I. rotundalis, I. julia, I. diminuendis, Zanclognatha minualis, Renia discoloralis, R. flavipunctalis, R. fraternalis, Bleptina caradrinalis, Phalaenophana pyramusalis, Abablemma brimleyana, Metalectra tantillus, M. richardsi, Dyspyralis illocata, Nigetia formosalis, Redectis vitrea, Scolecocampa liburna, Hypsoropha monilis, Hyperstrotia nana, Pangrapta decoralis, Arugisa lutea, Lesmone detrahens, L. hinna, Argyrostrotis flavistriaria, Panopoda rufimargo, P. repanda, Zale lunata, Catocala ilia, Mocis marcida, Gondysia similis, Phytometra rhodarialis*. **NOLIDAE**: *Nola cilicoides, N.* near *cilicoides* (very small), *Meganola minuscula*. **NOCTUIDAE**: *Acronicta hasta, A. brumosa, Polygrammate hebraeicum, Cerma cora, Marimatha nigrofimbria, Tarache aprica, Callopistria mollissima, Elaphria festivoides, E. excessa, Chytonix palliatricula, C. sensilis, Condica videns, Ogdoconta cinereola, Lacinipolia implicata, Anicla illapsa, Agrotis malefida*.

Griffin Ridge WMA, 3 mi. SW of Ludowici, Long Co., GA:
April 12, with Patrick Adams:
SATURNIIDAE: *Automeris io, Antheraea polyphemus, Actias luna, Callosamia angulifera*. **NOTODONTIDAE**: *Nadata gibbosa, Heterocampa guttivitta, Schizura* sp. (soon to be described in the upcoming MONA fascicle). **EREBIDAE**: *Metalectra tantillus, Pseudanthracia coracias, Melipotis jucunda*. **NOCTUIDAE**: *Pseudeustrotia indeterminata* (sixth specimen [second from this location] in **STATE**), *Sideridis vindemialis*, 9 specimens (no more than one specimen at any one time had been taken before).

May 8-9, with ILF:

OECOPHORIDAE: *Inga sparsiciliella, I. cretacea.* **COSMOPTERIGIDAE**: *Euclemensia bassetella.* **COSSIDAE**: *Cossula magnifica.* **MEGALOPYGIDAE**: *Megalopyge opercularis.* **LIMACODIDAE**: *Apoda biguttata, Isochaetes beutenmulleri.* **CRAMBIDAE**: *Munroessa gyralis, Synclita obliteralis, Apogeshna stenialis.* **PYRALIDAE**: *Dolichomia olinalis, Parachma ochracealis, Melitara prodenialis.* **GEOMETRIDAE**: *Nematocampa resistaria, Speranza pustularia, Macaria distribuaria, M. aequiferaria, Protoboarmia porcellaria, Iridopsis defectaria, I. vellivolata, Hypomecis* sp. (dark), *Hypagyrtis unipunctata, H. esther, Lytrosis sinuosa, Metarranthis lateritiaria*, Besma quercivoraria, Prochoerodes lineola, Nemoria lixaria, N. bistriaria, Scopula timandrata, Idaea tacturata.* **SATURNIIDAE**: *Anisota virginiensis (pellucida), Automeris io.* **LASIOCAMPIDAE**: *Tolype minta, T. notialis, Artace cribraria, Malacosoma americana, M. disstria.* **MIMALLONIDAE**: *Lacosoma chiridota.* **NOTODONTIDAE**: *Nadata gibbosa, Heterocampa guttivitta, H. astarte, H. umbrata, Peridea angulosa, Hyparpax aurora, Oligocentria lignicolor.* **EREBIDAE**: *Dasychira basiflava, Orgyia definita, Hypoprepia fucosa, Cisthene plumbea, C. subjecta, Halysidota tessellaris, Idia americalis, I. rotundalis, Zanclognatha* sp. near *lituralis, Z. atrolineella*, Z. minualis, Renia discoloralis, R. flavipunctalis, R. fraternalis, Bleptina caradrinalis, Macrochilo hypocritalis, M. lousiana, Abablemma brimleyana, Metalectra quadristimalis, Nigetia formosalis, Redectis vitrea, Hypenula cacuminalis, Hypsoropha monilis, H. hormos, Hyperstrotia nana, Pangrapta decoralis, Arugisa lutea, Lesmone detrahens, Argyrostrotis anilis, Panopoda repanda, Allotria elonympha, Catocala ilia.* **NOCTUIDAE**: *Acronicta ovata, A. modica, A. exilis, A. brumosa, Polygrammate hebraeicum, Charadra deridens, Marimatha nigrofimbria, Protodeltote muscosula, Elaphria festivoides, Chytonix palliatricula, Galgula partita, Morrisonia triangula.*

Dixon Memorial Forest WMA, cypress swamp, 7 mi. ESE of Waycross, Ware Co.:

April 11, with Patrick Adams:

GEOMETRIDAE: *Metarranthis lateritiaria*, M. obfirmaria, Petrophora divisata.* **SPHINGIDAE**: *Isoparce cupressi* (numerous). **SATURNIIDAE**: *Dryocampa rubicunda, Automeris io, Actias luna, Antheraea polyphemus, Callosamia securifera,* including a male (unusual at lights). **NOTODONTIDAE**: *Nadata gibbosa, Heterocampa guttivitta, Schizura* sp. (soon to be described in the upcoming MONA fascicle). **NOCTUIDAE**: *Callopistria cordata, Fagitana littera, Bellura obliqua* (**COUNTY**, few in STATE; occurrence here is unusual as there are no cattails nearby).

May 9-10, with ILF, Frank and Isaac Laccone:

LIMACODIDAE: *Lithacodes fasciola, Natada nasoni, Prolimacodes badia, Euclea delphinii.* **CRAMBIDAE**: *Munroessa gyralis, Parapoynx allionalis, Apogeshna stenialis, Argyria auratella.* **PYRALIDAE**: *Parachma ochracealis, Macalla superatalis.* **DREPANIDAE**: *Eudeilinea herminiata.* **GEOMETRIDAE**: *Nematocampa resistaria, Speranza pustularia, Macaria aequiferaria, Protoboarmia porcellaria, Ectropis crepuscularia, Anavitrinella pampinaria, Glena cognataria, Hypagyrtis unipunctata, Ilexia intractata, Lytrosis sinuosa, Euchlaena obtusaria, E. madusaria, Nepytia semiclusaria, Prochoerodes lineola, Scopula limboundata, Idaea demissaria, Lophosis labeculata, Costaconvexa centrostrigaria, Eubaphe meridiana*.* **SATURNIIDAE**: *Dryocampa rubicunda, Automeris io, Antheraea polyphemus, Callosamia securifera.* **LASIOCAMPIDAE**: *Tolype minta, Artace cribraria, Malacosoma disstria.* **SPHINGIDAE**: *Darapsa myron.* **NOTODONTIDAE**: *Heterocampa guttivitta, Schizura ipomoeae.* **EREBIDAE**: *Dasychira meridionalis, Orgyia definita, Crambidia pallida, Hypoprepia fucosa, Cisthene subjecta, C. packardi, Virbia opella, Apantesis phalerata, Halysidota tessellaris, Idia rotundalis, I. julia, I. lubricalis, Zanclognatha cruralis, Renia fraternalis, Abablemma brimleyana, Nigetia formosalis, Hypena palparia, Hypenula cacuminalis, Hypsoropha monilis, H. hormos, Hyperstrotia nana, Pangrapta decoralis, Ledaea perditalis, Arugisa lutea, Cutina albipunctella, C. distincta, Argyrostrotis erasa, A. sylvarum, A. deleta, A. flavistriaria, Metallata absumens, Ptichodis vinculum, Panopoda repanda, Allotria elonympha, Catocala charlottae* (COUNTY). **NOCTUIDAE**: *Polygrammate hebraeicum, Marimatha nigrofimbria, Bellura gortynoides** (Surprisingly, the first confirmed record for the **STATE**).

Dixon Memorial Forest WMA, sandy oak forest, ½ mile ENE of Laura Walker SP Lake,, Ware Co.:

April 11, with Patrick Adams:

MEGALOPYGIDAE: *Megalopyge pyxidifera.* **GEOMETRIDAE**: *Petrophora divisata.* **SPHINGIDAE**: *Dolba hyloeus, Darapsa choerilus.* **SATURNIIDAE**: Antheraea polyphemus. **MIMALLONIDAE**: *Lacosoma chiridota.* **EREBIDAE**: *Argyrostrotis sylvarum, A. deleta, A. flavistriaria, A. anilis, Panopoda repanda, Gondysia similis.* **NOCTUIDAE**: *Amolita fessa, Callopistria cordata, C. granitosa.*

May 9-10, with ILF, Frank and Isaac Laccone:

URODIDAE: *Urodus parvula* . **COSSIDAE**: *Cossula magnifica* (COUNTY), *Prionoxystus robineae.*

LIMACODIDAE: *Apoda biguttata, Prolimacodes badia.* **ZYGAENIDAE**: *Harrissina americana.* **CRAMBIDAE**: *Parapoynx allionalis, Argyria lacteella, A. auratella.* **PYRALIDAE**: *Dolichomia olinalis, Parachma ochracealis.* **GEOMETRIDAE**: *Macaria distribuaria, Glenoides texanaria, Iridopsis defectaria, Glena cognataria, Hypagyrtis esther, Epimecis hortaria, Euchlaena obtusaria, E. madusaria, Metarranthis lateritiaria, Synchlora frondaria, Scopula limboundata, S. timandrata, Idaea violacearia, I. tacturata.* **SATURNIIDAE**: *Dryocampa rubicunda, Automeris io.* **LASIOCAMPIDAE**: *Artace cribraria, Malacosoma americana.* **BOMBYCIDAE**: *Apatelodes torrefacta.* **MIMALLONIDAE**: *Lacosoma chiridota.* **SPHINGIDAE**: *Dolba hyloeus.* **NOTODONTIDAE**: *Peridea angulosa, Hyparpax aurora, Schizura ipomoeae.* **EREBIDAE**: *Hypoprepia fucosa, Virbia opella, Idia aemula, I. rotundalis, I. julia, I. lubricalis, I. diminuendis, Bleptina caradrinalis, Renia flavipunctalis, R. sobrialis, Dyspyralis illocata, Redectis vitrea, Schrankia maculata, Hypenula cacuminalis, Hypsoropha monilis, Scolecocampa liburna, Metalectra richardsi, Arugisa lutea, Lesmone detrahens, Argyrostrotis deleta, A. flavistriaria, Mocis marcida, Panopoda rufimargo, Pseudanthracia coracias*, Zale lunata, Catocala similis.* **NOCTUIDAE**: *Acronicta brumosa, Polygrammate hebraeicum, Marimatha nigrofimbria, Callopistria cordata, C. mollissima, Chytonix palliatricula.*

Chickasawhatchee WMA, 13 – 18 mi. WSW of Albany, Dougherty Co., May 10-11, with ILF:
COSSIDAE: *Prionoxystus robineae.* **LIMACODIDAE**: *Adoneta spinuloides, Monleuca semifascia, Prolimacodes badia, Euclea delphinii.* **ZYGAENIDAE**: *Harrissina americana.* **CRAMBIDAE**: *Munroessa gyralis.* **DREPANIDAE**: *Eudeilinea herminiata.* **GEOMETRIDAE**: *Nematocampa resistaria, Eumacaria madopata, Anavitrinella pampinaria, Iridopsis defectaria, Glenoides texanaria, Hypagyrtis unipunctata, Tornos scolopacinarius, Cabera quadrifasciaria* (COUNTY), *Lytrosis unitaria, Prochoerodes lineola, Eusarca confusaria, E. fundaria, Nemoria bistriaria, Idaea demissaria, Leptostales laevitaria, Lophosis labeculata, Eulithis diversilineata.* **LASIOCAMPIDAE**: *Malacosoma disstria.* **NOTODONTIDAE**: *Macrurocampa marthesia, Lochmaeus bilineata, Schizura ipomoeae.* **EREBIDAE**: *Orgyia definita, Hypoprepia fucosa, Virbia laeta, Halysidota tessellaris, Idia rotundalis, I. julia, I. diminuendis, Renia fraternalis, Macrochilo hypocritalis, Melanomma auricintaria*, Nigetia formosalis, Hypenula cacuminalis, Hypsoropha hormos, Pangrapta decoralis, Ledaea perditalis, Arugisa lutea, Panopoda carneicosta, P. repanda, Catocala lincolnana* (COUNTY, third location in STATE), *Phytometra rhodarialis.* **NOLIDAE**: *Nola cilicoides.* **NOCTUIDAE**: *Cerma cerintha, Polygrammate hebraeicum, Tripudia rectangula, Marimatha nigrofimbria, Bagisara repanda, Ponometia fasciatella, Azenia obtusia, Balsa malana, Condica videns, Ogdonconta cinereola, Phosphila miseloides, Leucania adjuta.*

Sapelo Island, McIntosh Co., 23 May 2014, John Hyatt:
SESIIDAE: *Carmenta pyralidiformis, C. texana.* **LASIOCAMPIDAE**: *Tolype minta.* **EREBIDAE**: *Zale undularis.* **EUTELIIDAE**: *Paectes nubifera.* **NOCTUIDAE**: *Ponometria semiflava, Acherdoa ferraria.*

John Hyatt sends in this short report: "I haven't been out collecting here yet, but from the looks of things, it's a normal spring season. *Anthocaris midea* was flying on Sapelo Island, McIntosh Co., GA, on April 3 ... probably a county record."

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

Mississippi: Rick Patterson, 400 Winona Rd., Vicksburg, MS 39180, E-Mail: rpatte42@aol.com

Ricky sends in the following report.

A review of specimens in the Mississippi Entomological Museum by Richard Brown did identify a specimen of a newly described *Hermeuptychia* species collected in Mississippi:

10 August 1999, Tombigbee National Forest, 33°16'05"N 89°05'01", Winston county, leg. D.M. Pollock, *Hermeuptychia intricata.*

Other Mississippi records are reported by Ricky Patterson:

16 May 2014, Tupelo, Lee county, *Compacta capitalis.*
16 May 2014, Chickasaw County Wildlife Mgmt Area, Chickasaw county, *Speyeria cybele cybele.*

23 May 2014, Vicksburg, Warren county, *Alcathoe caudata.*
30 May 2014, Vicksburg, Warren county, *Catocala clintoni.*

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

Steve compiled the following records from a number of collectors and/or photographers:

The following selected moth records were submitted by Bo Sullivan, all from his cabin near Warrensville, Ashe County (all collected using blacklights).

NOCTUIDAE:
Lithophane hemina – April 2-3
Lithophane oriunda – April 2-3 (**COUNTY**); previously reported in the state by Merrill Lynch from Watauga County
Lithophane scottae – April 2-3 (**STATE**)
Lithophane petulca – April 2-3
Lithophane grotei – April 2-3
Pyreferra citrombra – April 2-3
Pyreferra hesperidago – April 2-3
Pyreferra pettiti – April 2-3; (**COUNTY**); first NC record from the Mountains

The following selected moth records were submitted by Parker Backstrom, all from near Goldston in Chatham County.

GELECHIIDAE:
Chrysoesthia sexguttella – April 26 (**STATE**); photographed

TORTRICIDAE:
Larisa subsolana – May 9; photographed
Cydia gallaesaliciana – May 9 (**STATE**); photographed
Ecdytolopha mana – May 9; photographed

CRAMBIDAE:
Diastictis ventralis – April 27; photographed

PYRALIDAE:
Pococera aplastella – May 9 (**STATE**); photographed and collected

GEOMETRIDAE:
Mellilla xanthometata – April 8; photographed
Lytrosis permagnaria – May 21; photographed and collected; second record from this area

LASIOCAMPIDAE:
Heteropacha rileyana – May 1; photographed

SATURNIIDAE:
Sphingicampa bicolor – May 2

SPHINGIDAE:
Sphinx kalmiae – May 7; photographed

EREBIDAE:
Spargaloma sexpunctata – April 25, May 21; photographed
Gondysia smithii – April 28; photographed

NOCTUIDAE:
Lithophane viridipallens – April 19; photographed

Homorthodes lindseyi – May 3; photographed

The following selected moth records were submitted by Steve Hall, from a bioblitz at Lake James State Park, Burke County, conducted on April 13. All of these species occur primarily in the Mountains in North Carolina but were found here in the Piedmont at only 1,200 ft., although just two miles east of the foot of the Blue Ridge Escarpment. Habitat at the site consisted of an extensive low elevation seep, with both White Pine and Hemlock present in the canopy.

GEOMETRIDAE:
Macaria bisignata – April 13 (**COUNTY**)
Macaria fissinotata – April 13 (**COUNTY**)
Macaria minorata – April 13 (**COUNTY**)
Plagodis pulveraria – April 13 (**COUNTY**)
Probole nepiasaria – April 13 (**COUNTY**)
Metarranthis amyrisaria – April 13 (**COUNTY**)
Homochlodes disconventa – April 13 (**COUNTY**)

The following butterfly account was submitted by Harry Legrand. Place names refer to counties unless otherwise indicated, and records are not new county reports unless indicated. Records are all from March through May.

March was much cooler than average, setting back emergences of adults and thus the flight periods by about 10 days. Fortunately, rainfall over most of the state was fairly close to normal; essentially no areas in the state were under any drought status. As with most of 2013, butterfly numbers and diversity continued to be quite low in the eastern half of the state, for unknown reasons. Observers from Winston-Salem and Charlotte westward often had good results. There was essentially no movement of *Vanessa cardui* into the region, and numbers of *Danaus plexippus* remain low, with only a handful of records.

PIERIDAE:
Pontia protodice, this dwindling species was reported twice – one at a known site in Wake on April 30 (Mike Turner) and another one in Gates on May 20 (Brian Bockhahn); the latter county lies in the Coastal Plain, where we have had very few recent records.
Euchloe olympia, the first record for the northern mountains, and just the third site for the state, was made by David Campbell this season. He saw three adults along a trail leading off the Blue Ridge Parkway in Wilkes (**COUNTY**), on April 2. At the best known site in Madison, observers found the species on four dates between April 2-17, with the peak count of seven on April 2 (Gail Lankford and party).
Pyrisitia lisa, practically never reported in spring, one was seen by Richard Stickney at a flatrock area in Wake, on May 4.

LYCAENIDAE:
Feniseca tarquinius, this species seems to be reported more frequently in recent years, perhaps owing to better coverage. There were nine reports for the season, with all from the Piedmont/mountains except for one in the Coastal Plain in Pitt.
Satyrium calanus, Don Seriff had a good count of six individuals at a park in Mecklenburg, on May 20.
Satyrium favonius, one of the *ontario* race was seen by Brian Bockhahn on May 26 at Eno River State Park in Durham; this subspecies is quite rare in the Piedmont. Along the southern coast, where the *favonius* race (or at least nr. *favonius*) is present, the species is not rare, though infrequently reported. Thankfully, Taylor Piephoff found at least four on the Brunswick mainland near Ocean Isle Beach on May 31.
Callophrys irus, Derb Carter had a state record one-day count of 34, at a well-known site in Pender on April 15. There were two other reports from this area, but sadly there were no new sites reported for this declining species.
Callophrys hesseli, a state record one-day count of 18 was made by Derb Carter on April 13 at a well known site – Green Swamp in Brunswick. The other three reports for the season were also from well known sites in Brunswick and Bladen.
Parrhasius m-album, this scarce species was observed an excellent nine times, in seven counties; all but one (in Brunswick) were in the mountains and Piedmont.
Erora laeta, Owen McConnell photographed a rather worn adult in Graham (**COUNTY**) on April 24. This species is infrequently reported, and it is one of the very few photos known of the species from the state.

Glaucopsyche lygdamus, this species was seen only at two well-known sites, in Madison and Buncombe, this season. The peak count was eight, on April 13, as noted by Doug Johnston at Sandy Mush Game Land.

RIODINIDAE:

Calephelis virginiensis, the only report for the season was of two seen at Holly Shelter Game Land in Pender, on May 6 by Paulette Ogard and Sara Bright.

NYMPHALIDAE:

Phyciodes cocyta incognitus, Harry LeGrand carefully observed at least two individuals in western Ashe, close to the Tennessee state line, on May 28. The species was compared with numerous *P. tharos* individuals. The two individuals were along roadbanks through a meadow at a high elevation (approximately 4,200 feet). This is a very poorly understood species in the southern Appalachians, though it likely occurs in most counties in the state's mountains, and into northern Georgia.

Phyciodes batesii maconensis, this species is not rare in parts of the southern mountains, but few observers travel to such remote areas any more. Richard Stickney did on May 28, and observed and photographed seven adults at a known site in Clay on May 20.

Vanessa cardui, the only report for the season was one in the mountains in Buncombe on April 3, as seen by Gail Lankford.

Lethe creola, a very rare record for the mountains was one seen in Madison **(COUNTY)** on May 21 by Gail Lankford and party.

Hermeuptychia intricata, following the publication of the paper that described this as a new species, separate from *H. sosybius*, Andy Warren reviewed specimens at the University of Florida collection. He determined that there are records for three counties in the state, all in the mid-central Coastal Plain: one from Carteret on May 2, 1971; singles from Duplin on August 16, 1970 and August 18, 1972; and four from Jones on August 21, 1971. As this new species looks nearly identical to *H. sosybius*, new records will be slow in coming, unless persons begin to collect "*sosybius*" satyrs for examination.

HESPERIIDAE:

Erynnis icelus, one on the summit of Ceddar Mountain in Haw River State Park (Rockingham) on May 8 (Brian Bockhahn) was a good find for the central Piedmont.

Erynnis martialis, always an excellent find, one was photographed by Richard Stickney on May 20 in the Buck Creek area of Clay.

Thymelicus lineola, Harry LeGrand observed one in a meadow in Ashe, along the Tennessee state line, on May 29. There have been few reports of this non-native species from the state in recent years, and all records are still limited to the northernmost three mountain counties.

Hesperia metea, one was seen by Gail Lankford and party at a known site in Madison on April 17. At a new site, and record late for the state, was a female photographed by Brian Bockhahn at Haw River State Park in Rockingham **(COUNTY)** on May 24. Most state records occur in April.

Hesperia sassacus, this species was once thought to be scarce in the state, but recent field work has found them in a wide array of montane sites, mainly in high elevation meadows. Harry LeGrand found eight on May 28-29 in Ashe, along the Tennessee state line. Gene Schepker and Sven Halling photographed two along the Blue Ridge Parkway in Wilkes on May 30, and one was photographed by Richard Stickney on May 20 in far-southern Clay, near the southern edge of the range.

Poanes hobomok, Brian Bockhahn photographed one on May 8 at Mayo River State Park in Rockingham **(COUNTY)**; there are only a few state records as far east as the central Piedmont.

Amblyscirtes vialis, Brian Bockhahn and Paul Scharf found a new and large population of this uncommon species, along NC 105 in Burke **(COUNTY)** and McDowell. They counted eight adults along this road on May 15.

Megathymus yuccae, though there was a previous record for Rutherford of larval tents, one adult seen by David Campbell at a site near Westminster on April 12 was an excellent find; the species is very rare and local away from the state's southern Coastal Plain. In the latter part of the state, a good count of five adults was made by Richard Stickney in Holly Shelter Game Land (Pender) on April 22.

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

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

John sends in the following comment: "Winter here in the southern Appalachians was long, cold, and wet. Spring was a bit late coming, but the obligatory first *P. rapae* showed up in Kingsport (at least to my eyes) on schedule, March 12."

Texas: Ed Knudson, 8517 Burkhart Road, Houston, TX 77055, E-Mail: eknudson@earthlink.net

Ed sends in the following report for Texas:

Most of Texas has had a cool, fairly dry spring except for areas of central and east Texas, where there has been episodic rain associated with frontal systems.

The first section is a report of a collecting trip by Knudson and Bordelon to northeast TX during the first week of June. Our goal was *Catocala*, of which we managed to get 23 species. Unfortunately some of the species we hoped for, such as *C. sappho, C. judith, C. delilah,* and *C. miranda* did not show up.

Locality and date codes: M = Morris Co., TX Daingerfield SP, 2-4-VI-13; H = Hopkins Co., TX, Cooper Lake SP, 5,6-VI-13; A = Anderson Co., TX, Gus Engeling WMA, 7-VI-13 (permits required). (a) = abundant, (c) = common, (u) = uncommon. The *Catocala* were mainly at bait.

EREBIDAE: *Catocala innubens* H, (a); *C. epione*, MHA (a); *C. consors* A (c); *C. muliercula* M (u); *C. ilia* MHA (c); *C. umbrosa* MHA (u); *C. illecta* H (u); *C. messalina* A (u); *C. andromedae* HA (u); *C. gracilis* MH (u); *C. coccinata* M (u); *C. ultronia* MH (a); *C. grynea* HA (c); *C. alabamae* (including form olivia) MH (c); *C. grynea* HA (u); *C. clintoni* M (u); *C. similis* MHA (u); *C. minuta* (including form parvula) H (u); *C. micronympha* MHA (c); *C. connubialis* (mostly form cordelia) MHA (c); *C. amica* MHA (a); *C. lineella* MHA (c); *C. jair* MH (u). Other erebids of interest: *Spiloloma lunilinea* H (u); *Pseudanthracia coracias* A (u); and *Zale confusa* M (u).

NOCTUIDAE: *Xanthopastis timais* M (u); *Cosmia calami* MH (c); *Callopistria mollisima* A (u); *Acronicta betulae* M (u); *Sympistis kappa* H (u)

GEOMETRIDAE: *Tetracis crocallata* MH (u); *Nepytia semiclusaria* M (c).

One interesting record from Harris Co., TX, Houston 12-30-V-13 was *Erechthias minuscula* (Caribbean Scavanger Moth) (Tineidae). This probably is the first Texas record. Two specimens of *Litoprosopus futilis*, (Erebidae) were found in a bait trap in Jefferson Co., TX, Beaumont, in mid May, by Charles Bordelon.

Many of you have probably heard of the new US record of *Polygonia haroldii*, a Mexican species (apparently a vagrant) that showed up in the Davis Mts of TX this May. We also have an apparent "new" hairstreak from Texas, *Ministrymon janevicroy*, described by Glassberg (from older specimens in various collections). It differs from the very similar *M. azia*, by having light green-colored eyes and coarse texture on the gray ventral HW scales.

Virginia: Harry Pavulaan, P.O. Box 1124, Herndon VA 20172, E-Mail: pavulaan@aol.com

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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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