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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

A CLEAR CASE OF MISTAKEN IDENTITY

BY

CRAIG W. MARKS

I have been working the last seven years on a book about Louisiana's butterflies and skippers. Louisiana State University has agreed to print the book, with a tentative publication date in February, 2018. Recently, I was doing some research on 2017 records to add to the book before its final deadline and found on BugGuide a picture and entry which suggested a new species for the state had been reported, a Reversed Roadside Skipper (*Amblyscirtes reversa*) seen in Kisatchie National Forest, Rapides Parish on February 28, 2017.

The entry (which can be found at bugguide.net/node/view/1343670) was submitted by Junsuk Kim, a biologist who lives in the Alexandria, Louisana, area. Kim was kind enough to provide some background and details on the location. Specifically, the skipper came to a light he had set up at night to attact beetles. His picture is of the skipper perched on the white sheet laid out in association with his light. The location was at the entrance to the south campground of the Lake Valentine Rec Area. He did not retain the specimen.

Although not previously reported from Louisiana, I had included this skipper in my book as a "possible" to be found within the state. This small skipper's range is from southeast Virginia, through the Carolinas, extending into northern Georgia, and then along the Gulf Coast from west Florida into Mississippi. Although I've looked for this little roadside skipper along the Gulf Coast, I've not yet found it. Mary Ann Friedman has seen it in the western Florida panhandle. She has, by e-

Reversed Roadside Skipper, Okaloosa Co., FL., August 26, 2007 (Mary Ann Friedman)

mail, described this skipper as flying with Arogos Skippers in wet habitat with abundant cane. Even in the most likely conditions, she indicated it was difficult to find. It has also been found in Baldwin Co. in southeastern Alabama. Kilian Roever found it at Clark Creek Natural Area in Pond Mississippi, less than a mile from the West Feliciana Parish line, in mid-August, 1984. It has also been reported in Hancock Co., Mississipppi, in June and August as well as in Harrison Co. at the Big Biloxi Rec Area in April and August, both locations very close to the coast. These sightings are reflected as an isolated range extension in the Kaufman guide.

Several sources suggest this species is rarely seen, found in small, local colonies and is more restricted in range than its host plant, switch cane. Its preferred habitat is canebreaks at the edges of blackwater streams and rivers. Throughout much of its range, there are three broods, late April to May, late June to July and late August through early September.

So, while the notion of finding this skipper in Louisiana was not a complete surprise, its appearance in the Piney Woods of central Louisiana in February was not where or when I expected it to be discovered. The picture shows a somewhat worn skipper. The BugGuide entry indicates a gentleman from Connecticut made the species determination, "based on light spots on peppered HW, the relatively long antenna and the white eye rings."

While I would agree the coloring is not completely wrong, I don't agree with the final diagnosis. First, I

Pepper and Salt Roadside Skipper, Rapides Parish (Castor Plunge Rd.), March 24, 2015 (D. Patton)

visited the specific area on August 19, 2017, and walked not just the area of the south campground, but also around most of the lake. I found no stands of switch cane. I believe the spot pattern better matches a Pepper and Salt Roadside Skipper (*Amblyscirtes hegon*), which also has long antennas and white rings around the eyes.

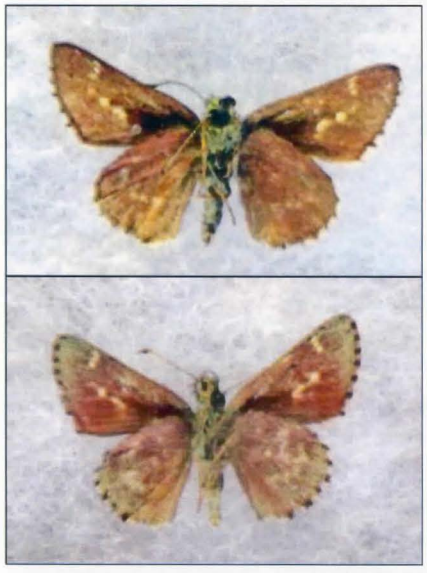
The Pepper and Salt Roadside Skipper is a small, early spring skipper, flying only in March and April. It feeds on several kinds of grasses, including river oats, fowl mannagrass, and Indian grasses. It is uncommon in north Louisana (Caddo Parish) from mid-March to mid-April; however, I have found it regularly in central Louisiana, always in the Kisatchie National Forest units in Winn, Natchitoches, Rapides and Vernon Parishes. My dates include March 13, 16, 17, 20, 21 and April 18. In fact, on March 13, 16, I found 10+ of that skipper along the road to the Wild Azalea Seep location there in the Rapides Parish Kisatchie unit, probably less than five miles from Lake Valentine as a crow flies.

While speaking of this skipper, as is reflected by the pictures below, I have found two "forms" (a color, geographic, or seasonal variation of a species, not a formal family or species) of the Pepper and Salt Roadside Skipper in Louisiana, and my suggestion is that the skipper photographed by Kim is an example of the typical, darker form.

Pepper and Salt Roadside Skippers, Sisily Island Hills WMA, March 10, 2012

I first discovered the existence of the second color form on March 10, 2012, when I visited Sisily Island Hills Wildlife Management area (WMA) in Catahoula Parish for the first time, primarily to look for Yucca Giant-skipper "tents", indicating the presence of pupae preparing to molt. I was surprised by the landscape, heavily wooded loess hills with deep ravines, similar to what can be found at Clark Creek Nature Area near Pond, Mississippi. There was a great deal of cane growing, both in the ravines and along the road. The forest was a combination of deciduous and coniferous trees. I found no real open areas or even pine flats, and the butterfly population on this day reflected this "deep forest" habitat.

I saw a total of 17 species, including Pepper and Salt Roadside Skippers along with what I initially thought were either Carolina (*A. carolina*) or Reversed Roadside Skippers; however, I soon realized that I was seeing two forms of Pepper and Salt Roadside Skippers. These skippers were extremely abundant, both on the road basking and taking nectar at wild garlic. My confusion had been generated because some were not the typical darker color with gray frosting, but were more of a tannish color. Specifically, I would estimate that one out of five seen that day were tan colored dorsally rather than the typical dark brown with slate gray frosting. I don't believe this was a result of fading as all specimens with the tan coloring appeared fresh.



More tan-colored Pepper and Salt Roadside Skippers, Sisily Island Hills WMA, March 10, 2012

I have reviewed various regional guides and found no reference that this species was either dimorphic or had seasonal forms. Cech/Tudor (2005), Glassberg (1999), Glassberg (2012) and Scott (1986), as well as numerous state guides, presented pictures of the typical dark form with the slate gray frosting. I have been unable to find any source-material explanation of the tan-colored form, but a few state guides had pictures of tan-colored specimens. For example, Neilson (1999) and Iftner (1992) include ventral pictures of specimens that appear to match the tan colored form I found at Sisily Hill, the former showing a Michigan male and the latter, an Ohio female. Emmett (2005) depicted one from North Carolina. I have not seen any of the tan-colored form in any of the Kisatchie units.

I still have hopes of finding either a Reversed or Carolina Roadside Skipper in Louisiana, either along the Louisiana/Mississippi border or along the Mississippi River corridor. In fact, I wouldn't be surprised if one (or both) show up at Sisily Island Hills WMA. There is certainly enough cane there. Other cane feeders found at that WMA include Southern Pearly-eyes, Yehl Skippers and Lace-winged Roadside Skippers.

Searching cane breaks is not particularly fun. Switch cane grows in both moist areas and on steep inclines leading down to moist areas. Trying to find a small, mostly dark, low flying skipper translates to wet shoes, unsure footing, mosquitoes, biting flies, water moccasins, and even an occasional canebreak rattlesnake. Still, the prospect of finding the first Reversed Roadside Skipper in Louisiana keeps pushing me into those hostile environments.

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

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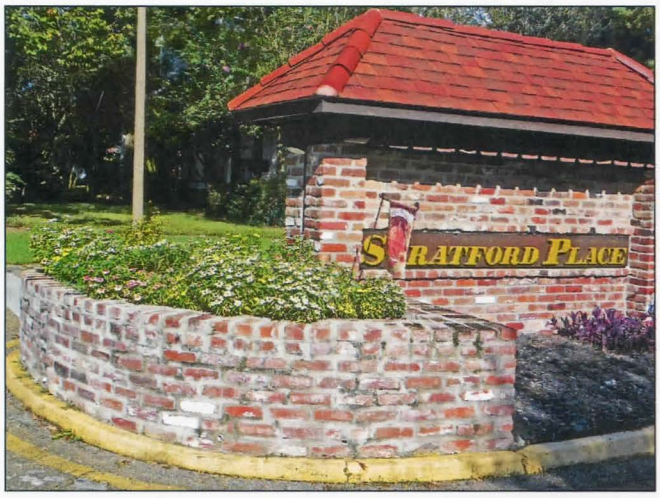
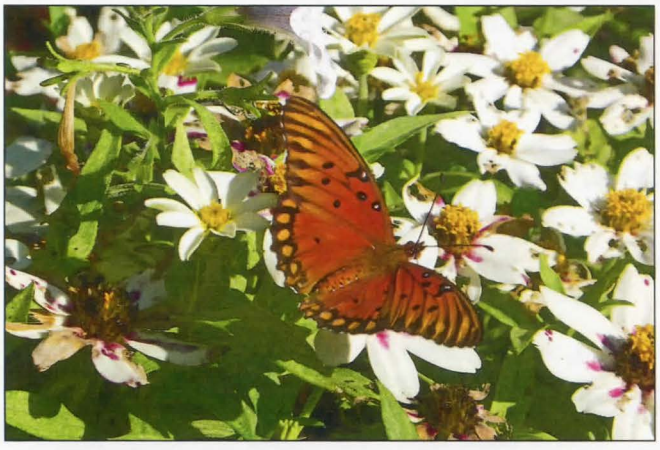
SUBDIVISION ENTRANCEWAY GARDEN

BY
GARY NOEL ROSS





These images are of the entranceway to my subdivision, STRATFORD PLACE, in south Baton Rouge, LA. I designed and installed the landscape in 1973 shortly after I moved into the new development; ever since, I have maintained the plantings. In 2014 the sign and the annual flower garden sector had to be reconstructed due to destruction by a vehicle. The current installation features a small, elevated pollinator garden composed of annuals that I change twice each year. The planting this past summer/fall featured dwarf zinnias ("Zahara" cultivar). The new planting proved surprisingly effective for butterflies and honey bees/bumblebees—in spite of its location on a small peninsular bounded by asphalt, and the absence of any other flower garden in the vicinity. I identified the following butterflies throughout most of the summer and fall 2017: Gulf Fritillary (*Agraulis vanillae*), Monarch (*Danaus plexippus*), Painted Lady (*Vanessa cardui*), Common Buckeye (*Junonia coenia*), Long-tailed Skipper (*Urbanus proteus*), and Whirlabout (*Polites viator*).

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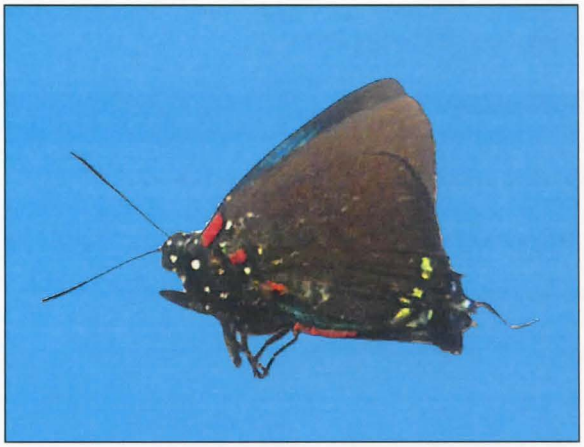

Great Purple Hairstreak (*Atildes halesus*)

Great Purple Hairstreak (*Atildes halesus*) (male) collected by Dave Rupe on retaining wall in backyard on September 15, 2017 (Cove Creek Road south of Prairie Grove, Washington County, Arkansas). Dave states *"There are records of this species in Washington County, but certainly surprised me to see it. Was cleaning pool one last time before closing it and noticed this guy resting on top of the retaining wall."*

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

THE MOON [1]

Phases of the Moon:

There are 8 major phases that the moon goes through.

A ***new moon*** is when the Moon cannot be seen because we are looking at the unlit half of the Moon. The new moon phase occurs when the Moon is directly between the Earth and Sun. A solar eclipse can only happen at new moon.

A ***waxing crescent moon*** is when the Moon looks like crescent and the crescent increases ("waxes") in size from one day to the next. This phase usually is only seen in the west.

The ***first quarter moon*** (or a half moon) is when half of the lit portion of the Moon is visible after the waxing crescent phase. It comes a week after new moon.

A ***waxing gibbous moon*** occurs when more than half of the lit portion of the Moon can be seen and the shape increases ("waxes") in size from one day to the next. The waxing gibbous phase occurs between the first quarter and full moon phases.

A ***full moon*** is when we can see the entire lit portion of the Moon. The full moon phase occurs when the Moon is on the opposite side of the Earth from the Sun, called opposition. A lunar eclipse can only happen at full moon.

A ***waning gibbous moon*** occurs when more than half of the lit portion of the Moon can be seen and the shape decreases ("wanes") in size from one day to the next. The waning gibbous phase occurs between the full moon and third quarter phases.

The ***last quarter moon (or a half moon)*** is when half of the lit portion of the Moon is visible after the waning gibbous phase.

A ***waning crescent moon*** is when the Moon looks like the crescent and the crescent decreases ("wanes") in size from one day to the next.

An ***old moon*** is a moon with only a tiny bit of the moon seen in the corner, about to turn into a new moon.

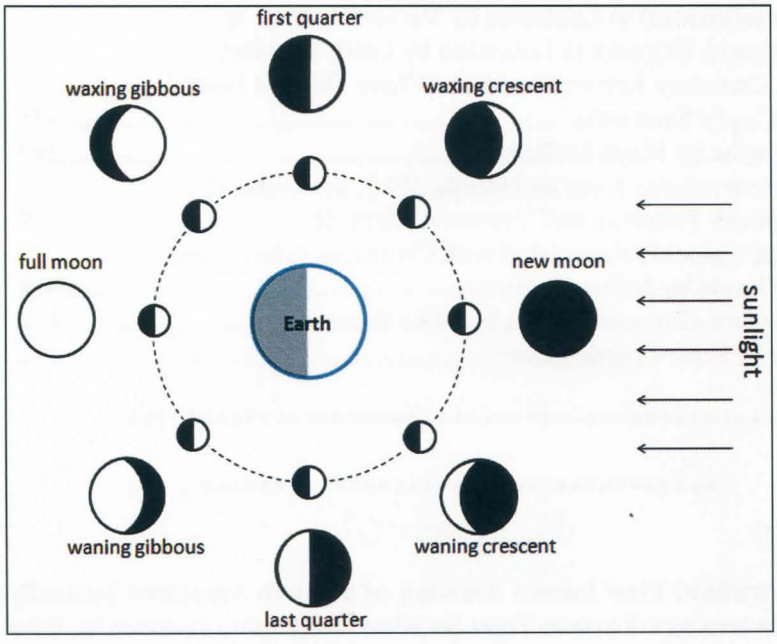

Diagram of the Moon's phases: The Earth is at the center of the diagram and the Moon is shown orbiting (dashed circle). The Sun lights half of the Moon and Earth from the right-side. The phase of the Moon is shown next to the corresponding position of the Moon in its orbit around Earth. The phase is as seen in the Northern hemisphere of the Earth.

([1]This information is re-printed verbatim from Wikipedia: https://simple.wikipedia.org/wiki/Phases_of_the_Moon).

(Continued on page 290)

THOMAS SAY'S *HIPPARCHIA ANDROMACHA*: A DUPLICATE ILLUSTRATION OF A SOUTHEASTERN BUTTERFLY

BY
JOHN V. CALHOUN

Born in Philadelphia, Thomas Say (1787-1834) is often called father of American entomology. In 1817, he first attempted to produce "a publication of no inconsiderable magnitude on the insects of North America." Not much more than a prospectus, this brief publication was followed in 1824 by the first full volume of his proposed work, entitled *American Entomology, or Descriptions of the Insects of North America*. Two more volumes followed in 1825 and 1828. It was the first book on American insects to be published in America by an American. The three volumes included 54 hand-colored illustrations, which were drawn by at least four talented artists: Hugh Bridport (1794-1869), Charles A. Lesueur (1778-1846), Titian R. Peale II (1799-1885), and William W. Wood (1805-?). Multiple artists were employed because Say struggled to find a single artist to complete the work (Stroud 1992). The engravers who converted the drawings into plates were George S. Lang (1799-1877), James B. Longacre (1794-1869), and especially Cornelius Tiebout (1773-1832), who is recognized as the first notable American-born engraver in this country (Stauffer 1907). Longacre later served as the chief engraver for the United States Mint in Philadelphia. Twelve plates in Say (1817, 1824-1828) portray species of Lepidoptera (ten butterflies and three moths). Heppner (2009) summarized the book and included reproductions of the text and plates on the Lepidoptera. Although much has been written about Say's book, I recently made an unexpected – and apparently new – discovery while leafing through my own copy.

The lengthy title of Say's book claims that it was "Illustrated by Coloured Figures from Original Drawings Executed from Nature." In his preface, Say (1817) assured readers that "The best artists are engaged to execute the plates – these will be engraved with the utmost care, from accurate drawings taken from the subjects themselves, and not in any instance will they be copied from books." His reference to copying plates from other books is of particular relevance. The duplication of individual figures, or even entire compositions, was done with some frequency in early entomological works (Calhoun & Wright 2016). This usually took place without credit to the original artists or authors. Although Say promised that such duplication would not occur in his book, at least one of his butterfly plates is based on an illustration that appeared 16 years earlier in a well-known German work.

Appearing on Plate 36 in the second volume of *American Entomology*, published in 1825, was an illustration of a butterfly that Say identified as *Hipparchia andromacha* (Fig. 1). In the text that accompanied the plate, Say wrote that he had received two specimens of this species from "Mr. Thomas Nuttall, who obtained them in Arkansaw." Thomas Nuttall (1786-1859) was an English zoologist and botanist who traveled extensively in North America between 1809 and 1836. He presumably collected the two specimens of *H. andromacha* when he explored the Arkansas Territory (then known as the Territory of Arkansaw) in 1819 (Nuttall 1821). Subsequent authors therefore assumed that the figures on Say's plate portrayed at least one of those specimens from Arkansas (Clark 1936, Heitzman & dos Passos 1974, Heppner 2009).

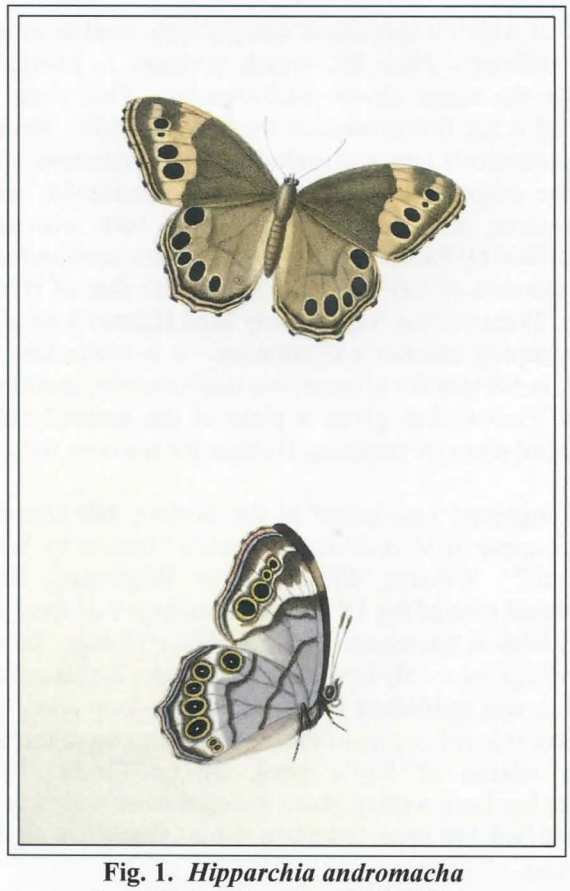

Fig. 1. *Hipparchia andromacha* from Plate 36 of Say (1824-1828).

The name *andromacha* was once used for the species now known as *Lethe portlandia* (F.) (southern pearly-eye). However, *Lethe anthedon* (Clark) (northern pearly-eye) was not described until 1936, and until then this butterfly was thought to represent the same species as *portlandia*. Even after its description, *anthedon* was usually treated as a subspecies of *portlandia*. Heitzman and dos Passos (1974) finally demonstrated that *anthedon* and *portlandia* were indeed separate species. They also went so far as to identify Say's *H.*

andromacha as *L. anthedon*, which is more common than *L. portlandia* in Arkansas (Spencer 2006). However, their analysis overlooked one very important detail.

In 1776, the English artist and naturalist John Abbot (1751-c.1840) arrived in Georgia, where he illustrated and collected insects for the remainder of his life. A large number of his butterflies and moths were sold to European buyers, who then exchanged them among themselves for other desirable specimens. Some made their way, apparently indirectly, to Jacob Hübner (1761-1826), a talented artist and entomologist in Augsburg, Germany. Hübner is best known to North American lepidopterists for his multi-volume work entitled *Sammlung Exotischer Schmetterlinge* [Collection of Exotic Butterflies] (Hübner 1806-1838), which figured and named many species of Nearctic and Neotropical Lepidoptera.

One of Abbot's specimens was possibly used as a model for Hübner's Plate 89, which portrays *L. portlandia* under the name *Oreas andromacha*. This plate was issued in the first volume of the book in 1809. Because no descriptive text was included, this illustration serves as the original description of *O. andromacha*, which represents the same species that was previously described by Fabricius (1781) as *Papilio portlandia*. A comparison of Say's plate (Fig. 1) with that of Hübner (Fig. 2) shows that Say not only used Hübner's name, he also copied Hübner's illustration. It is interesting that Say, in his text for *Hipparchia andromacha*, mentioned that "Hubner has given a plate of the insect," but he stopped short of crediting Hübner for his own figures.

An engraved inscription at the bottom left corner of Say's plate of *H. andromacha* reads "Drawn by W. W. Wood." William Whiteman (or Wightman) Wood rendered nine of the 18 original drawings that were used for plates in the second volume of Say's book. Wood's drawings were only reproduced for plates in this volume, which was published in 1825. Thirty-four years later, poorly colored copies of these engravings were included in a reissue of Say's book by Le Conte (1859). Little has been written about Wood's work with Say, but a lot of ink has been dedicated to his subsequent exploits in Asia.

Born in Kentucky, Wood was the son of famous Philadelphia actors William Burke Wood and Juliana Westray Wood. He was characterized as clever and pleasant, a romantic, a poet, and an "immense talker" with an "irascible temper" (Lamas 2006, French 2009). One evening, Wood began talking at 7 pm and did not cease until 10 pm, "without scarcely a response except a laugh from the rest of the party" (Lamas 2006). He was more comfortable in private: "In a mixed company you would think him the greatest rattle that ever existed, but take him by himself, let him feel interested, then he shines" (Lamas 2006). Considered "not handsome," he had an "intellectual face – high and noble forehead, blue eye[s] and brown hair," with a "sweet smile" (Lamas 2006).

Fig. 2. *Oreas andromacha* from Plate 89 of Hübner (1806-1838).

Wood was also as "a young but zealous naturalist," and a talented artist who could "do anything with a pen and pencil" (Harlan 1825, Johnson 2017). He sketched and painted with members of the Peale family, including T. R. Peale, and worked for a time at Peale's Museum in Philadelphia (Sellers 1980). Wood collected objects of natural history around Philadelphia, and some of his insects were mentioned in Say's other publications (Le Conte 1859). In late 1824 and early 1825, Wood read papers about new species of fish and salamanders at meetings of the Academy of Natural Sciences in Philadelphia (ANSP). Later in 1825, he departed for Canton, China, "in search of objects of interest, in the reasonable expectation of bettering his condition" (Silliman & Silliman 1839). He lived in China for several years, initially working as a clerk for an American opium dealer, then as editor of the first two English-language newspapers on the China coast (Pickowicz 1971, French 2009). This explains why Wood contributed no illustrations for Say's book beyond the second volume.

Around 1828, Wood briefly returned to Philadelphia and published the book *Sketches of China* (Wood 1830,

Pickowicz 1971). He went back to Canton in early 1831 and lived there until 1833, when he relocated to Manila, Philippines. While in the Philippines, he wrote a fanciful account of his tour of the islands (Wood 1839) and later operated a daguerreotype photography studio (Hannavy 2008). Wherever he lived, he collected natural history specimens and artifacts, which he shipped back to Philadelphia (Anonymous 1839, Pickowicz 1971, Sellers 1980). He never married and died sometime after 1874.

Wood must have rendered the nine drawings for the second volume of Say's book sometime prior to 1825 when he departed for China. Say was working on the second volume by December 1824 (Weiss & Ziegler 1931). In late 1825, after this volume was published, Say left Philadelphia for New Harmony, Indiana, where he lived for nine years until his death in October 1834. Wood, who was 20 years old in 1825, obviously had access to a copy of the first volume of Hübner (1806-1838).

Although Wood was permitted to use the excellent library of ANSP (Keating 1825), that repository did not obtain their copy of Hübner's *Sammlung Exotischer Schmetterlinge* until 1865, when the library of Thomas B. Wilson (1807-1865) was bequeathed to the American Entomological Society (Cresson [1911]). The library of the American Philosophical Society also lacked a copy (Carey et al. 1824). Most likely, Wood borrowed the book from the Scottish geologist and philanthropist William Maclure (1764-1840), a friend and benefactor of Say. As an expression of gratitude, Say dedicated *American Entomology* to Maclure, who maintained a very large personal library and served as president of ANSP for many years. Maclure donated many books to ANSP between 1819 and 1835 (Morton 1844). Although *Sammlung Exotischer Schmetterlinge* was apparently not among them, he probably possessed this important entomological work, at least the first volume, which was issued between 1806 and 1819. Say often consulted Maclure's valuable library during his research on insects (Stroud 1992).

Say cited Hübner's book in his discussion of *Hipparchia andromacha*, suggesting that he was aware that his plate was derived from that work. Nuttall's specimens most likely represented *L. anthedon*, but were possibly too damaged to illustrate. Wood used Hübner's illustration as a template, and, thinking that they represented the same species, probably consulted Nuttall's specimens to refine the wing pattern. If so, Wood created a composite of *L. anthedon* and *L. portlandia*. Say perhaps considered Wood's version to be an original illustration. After all, Wood presumably used actual specimens to improve on the details, resulting in a drawing that was at least partially "executed from nature."

Finally, in a twist of fate, a portion of Say's own plate of *H. andromacha* was later duplicated without credit. Plate 44 of Brown (1832) (Fig. 3) is a shoddy copy of Say's dorsal figure. Brown identified the species as *Papilio andromacha* and remarked that it "frequents Arkansaw, in the United States." Of course, Brown claimed that his plates were "coloured after nature."

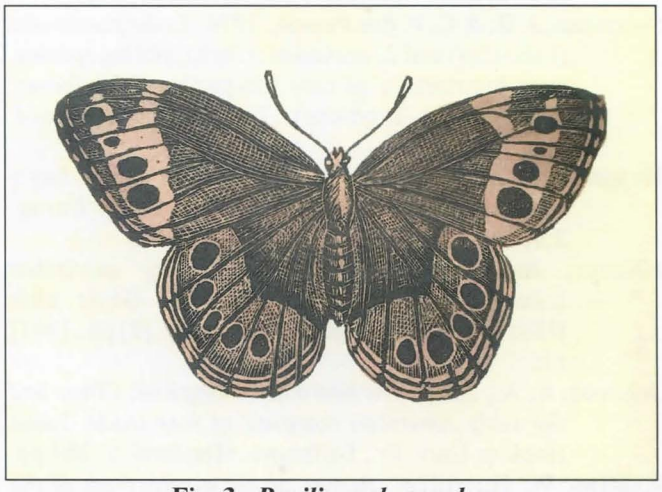

Fig. 3. *Papilio andromacha* from Plate 44 of Brown (1832).

Acknowledgments. Paul G. Pickowicz (University of California, San Diego) kindly provided a reprint of his paper about William Wood. Kelsey Manahan (Library and Archives, ANSP) confirmed the provenance of their copy of *Sammlung Exotischer Schmetterlinge*.

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(John V. Calhoun, 977 Wicks Dr., Palm Harbor, FL 34684; E-mail: bretcal1@verizon.net)

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Spotted Oleander Caterpillar Moth (*Empyreuma pugione*)

Charlie Stevens sends in this report concerning his sighting of the Spotted Oleander Caterpillar Moth (*Empyreuma pugione*) in his yard in Jacksonville, Florida. The sighting was around September 15, 2017, just after hurricane Irma hit. Tom Neal states that Jacksonville would be a northernmost record for this moth. (The photo is of a specimen in Tom Neal's collection.)

SECOND ANNUAL "POLLINATION CELEBRATION" IN LOUISIANA

BY

GARY NOEL ROSS

On Saturday September 16, 2017, the Tangipahoa Parish Master Gardener Association (TPMGA) in association with the Louisiana State University AgCenter Hammond Research Station premiered its second annual "Pollination Celebration." This was a daylong event that promoted the importance of pollinators for the production of seeds and fruits for the world's landscapes and food supplies. [The festival premiered on Saturday September 24, 2016 (see Ross, 2016a,b for description of site).]

The weather for the celebration was similar to that in 2016: hot and humid with temperatures ranging between 75 and 90 degrees F., relative humidity hovering near 65 percent, and skies foggy in the early morning to partly cloudy at midday to cloudy near closing time. The gardens were in prime condition because of adequate summer rainfall. Admittance consisted of a parking fee of $5.00/vehicle regardless of number of occupants.

The greatest difference between the two events is that there was an increase in programming in 2017. The following were the titles:

History of Hammond Research Station
Butterfly Gardening
The Truth About GMO,s
How Soil Heath Affects Planting for Pollinators
About Hummingbirds
Beginning Backyard Beekeeping
Pollinators and Pollinator Plants
Mason Bees
Importance of Pollinators to Fruit, Nut Production
The Honey Makers
Monarchs and Milkweeds
Planting Natives to Attract Pollinators
Gardening for Hummingbirds
Managing Pests without Harming Pollinators
Herb Gardening and Salvia
Plant It and They Will Come
My Weeds, My Bugs and Why They Matter
Pollinator Favorites
Tree'mendously Helping Pollinators

In addition to the above, several walking and wagon tours were conducted within the formal gardens throughout the day. Family activities included: demonstrations of hummingbird banding and releases, a demonstration of an active honey bee hive along with honey sampling, and tips for raising butterflies. "Make-n-Take" activities for youngsters centered on following: making a mason been house, planting a seed, making a hummingbird feeder, making a butterfly wind spinner, and participating in a scavenger hunt to answer questions posed on a flyer. One of the new attractions was the "Bugmobile" operated by the Audubon Nature Institute of New Orleans. [The "Bugmobile" is a mobile education program operated out of a closed van. The display offers interactive hands-on, close-up demonstrations about insects often found in southern backyards. Displays and discussions include life-cycles (especially the butterfly/moth metamorphic life cycle), habitats, and classification.] One of the more interesting exhibits at this year's "Pollination Celebration" included a live presentation of the life cycle of the Carolina Sphinx Moth (*Manduca sexta*)—the adult of the Tobacco Hornworm, the most common pest of tomato plants in the Gulf South.

During the day, I identified 26 species of butterflies, listed here in descending order of abundance ("1" indicates only a single individual): Cloudless Sulphur (*Phoebis sennae*), Gulf Fritillary (*Agraulis vanillae*), Pipe-vine Swallowtail (*Battus philenor*), Long-tailed Skipper (*Urbanus proteus*), Common Buckeye (*Junonia coenia*), Monarch (*Danaus plexippus*), Giant Swallowtail (*Papilio cresphontes*), Painted Lady (*Vanessa cardui*), Eastern Tiger Swallowtail (*Papilio glaucus*), Horace's Duskywing (*Erynnis horatius*), Spicebush Swallowtail (*Papilio troilus*), Fiery Skipper (*Hylephilia phyleus*), Common Checkered Skipper (*Pygrus communis*), Ocola Skipper (*Panoquina ocola*), Carolina Satyr (*Hermeuptychia sosybius*), Whirlabout (*Polites vibex*), Gray Hairstreak (*Satyrium melinus*)-1, Red-banded Hairstreak (*Calycopis cecrops*)-1, Orange Sulphur (*Colias eurytheme*)-1, Little Yellow (*Eurema lisa*)-1, Red Admiral (*Vanessa atalanta*)-1, Silver-spotted Skipper (*Epargyreus clarus*)-1, (Pearl Crescent (*Phyciodes tharos*)-1, American Snout (*Libytheana carinenta*)-1, and Little Glassywing (*Pompeius verna*)-1.

The list of species is similar to that of 2016 when 24 species were recorded. There were, though, two notable exceptions. First: the absence of the Great Southern White (*Ascia monuste*), a species common in the coastal marshlands but notorious for moving northward during summer months. In the fall of 2016, *A. monuste* was being reported from many inland regions of Louisiana and Mississippi. Then in the summer of 2017, I and other butterfly gardeners were observing this white butterfly in several locales in Baton Rouge. Surprisingly, however, at the time of the festival, I failed to locate any adults or larvae on the grounds in spite of

Fig. 1. Headquarters and Reception Center for LSU Ag Center Hammond Research Station. Building served as an air-conditioned venue for several programs during the festival.

Fig. 2. Flyer advertising the 2017 "Pollination Celebration."

Fig. 3. Walking tour to identify plants and pollinators in garden plots.

Fig. 4. Wagon tour to identify plants and pollinators in various gardens on the grounds.

Fig. 5. The "Bugmobile" operated by the Audubon Nature Institute of New Orleans. This was a new exhibit for 2017.

Fig. 6. Close-up of painted design on "Bugmobile."

Fig. 7. Detail of painted design on "Bugmobile."

Fig. 8. Setting up exhibit by representative of the Audubon Nature Institute. Exhibit proved extremely popular for both kids and adults.

Fig. 9. Close-up of exhibit by Audubon Nature Institute. Exhibit included preserved insects in display cases as well as live displays.

Fig. 10. Child enjoying coloring a butterfly at exhibit by Audubon Nature Institute.

Fig. 11. A live display featuring the life cycle of the Carolina Sphinx Moth (*Manduca sexta*). The larva/caterpillar of this species is known as the Tobacco Horn Worm; it is the most common pest of tomato plants in the Gulf South. The horn is a bluff to deter predators. Display by Audubon Nature Institute.

Fig. 12. Pupa of the Carolina Sphinx Moth (Tobacco Horn Worm). Pupa is bare, i.e., not enclosed within a cocoon. The pupa is buried in lose soil for protection. Display by Audubon Nature Institute.

the fact that the gardens featured a sizable stand of spider flower (*Cleome*), an ornamental host for the butterfly. Second: the presence of a large number of Painted Lady butterflies (*Vanessa cardui*) — a species noted at this same time by many observers especially in the Mid West and Rocky Mountain states. *V. cardui* undergoes periodic population explosions in which massive numbers of individuals particularly in early fall tend to fly in a westerly and southern direction; and so, 2017 proved one of those migratory years. (The movements are really not migrations since the butterflies do not have designated destinations and do not return from their fall flights. The proper term is emigration).

Statistics include: 834 counted visitors (the addition of volunteers, vendors, speakers, brought the total of attendees to 998), 14 craft booths, 6 food booths, 2 educational nonprofit booths, 57 volunteers, and 23 guest speakers. A total of 14 parishes (LA), 22 cities, and 29 zip codes were represented. Parking fees along with several sponsorships allowed TPMGA to realize a small profit—all of which will be used in educational projects.

Linda Beall, a noted master hummingbird researcher and bander, was successful in capturing, documenting, and banding 31 hummers (11 more than in 2016); all were Ruby-throated Hummingbird (*Archilochus colubris*); none had been previously banded. The hummers all showed significant fat reserves indicating that they were migrating. All were released, often with visitors participating. The activity was a major crowd pleaser.

The committee is looking forward to 2018 and presenting its third annual "Pollination Celebration." Date: Saturday September 15, 2018.

[NOTE: All photographs by the author.]

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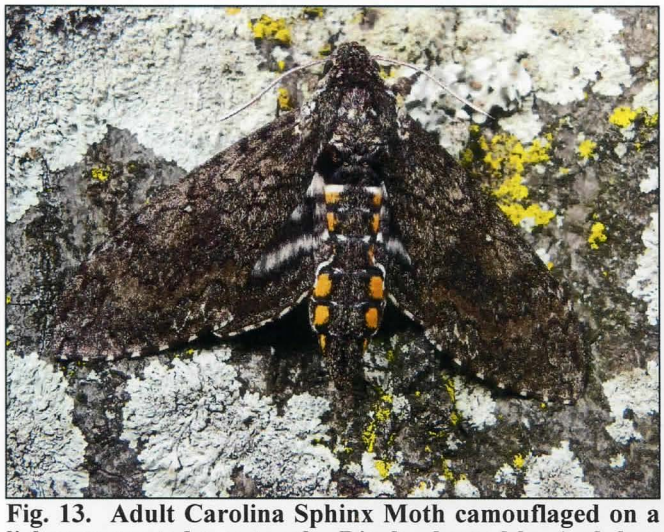

Fig. 13. Adult Carolina Sphinx Moth camouflaged on a lichen encrusted tree trunk. Display hosted by Audubon Nature Institute.

Fig. 14. Monarch Waystation Garden. Several species of milkweed are included along with a copy of author's 2001 Baton Rouge Earth Day poster, "Butterflies of Southern Gardens," to assist visitors with butterfly identifications at the celebration.

Fig. 15. Close-up of Mexican milkweed (*Asclepias curassavica*, yellow variety) in Monarch Waystation Garden.

Fig. 16. An example of a Sun Garden. Author's poster is included for assistance with butterfly identification.

Fig. 17. Monarch caterpillar (*Danaus plexippus*) feeding on Mexican milkweed.

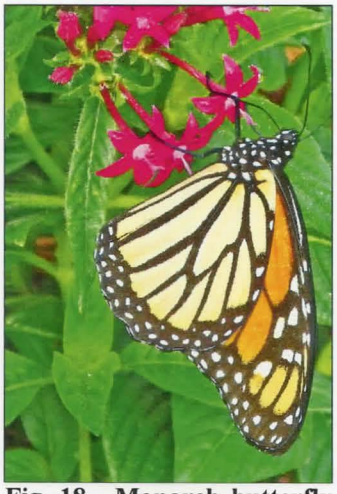

Fig. 18. Monarch butterfly (female) nectaring on red pentas flower.

Fig. 19. Trial bed for a new variety of zinnia.

Fig. 20. Trial bed for new varieties of SunPatiens a registered product of "Sakata."

Fig. 21. Candlestick plant (*Cassia alata*) in full bloom. Plant is host to several varieties of sulphur (Family Pieridae) butterflies.

Fig. 22. Giant Swallowtail (*Papilio cresphontes*) resting below a viable chrysalis. Host plants are various citrus and rue.

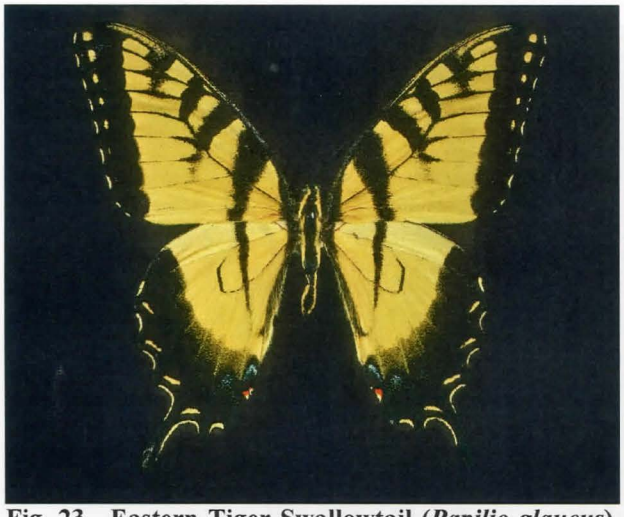

Fig. 23. Eastern Tiger Swallowtail (*Papilio glaucus*), male. Host plants include numerous hardwood trees such as tulip poplar, ash, and cottonwood. Photo staged.

Fig. 24. Eastern Tiger Swallowtail, dark phase of female on swamp/narrow-leaf sunflower (*Helianthus angustifolius*), a fall bloomer common in Louisiana.

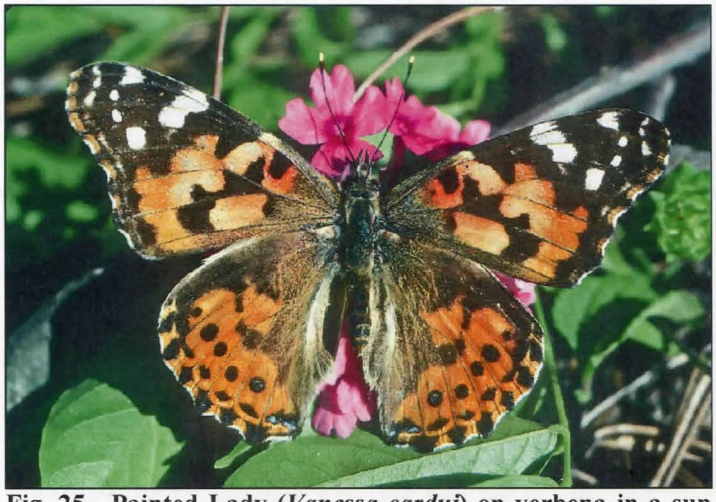

Fig. 25. Painted Lady (*Vanessa cardui*) on verbena in a sun garden. Butterflies were in one of their migratory years. Numerous host plants, especially composites such as thistle (including artichoke) and sunflowers, and hibiscus family such as althea and mallows.

Fig. 26. Linda Beall, a nationally certified bander for hummingbirds, educates visitors on the science and art of safely banding tiny hummingbirds.

Fig. 27. Linda Beall sharing a view of a banded Ruby-throated Hummingbird (*Archilochus colubris*) with a young visitor.

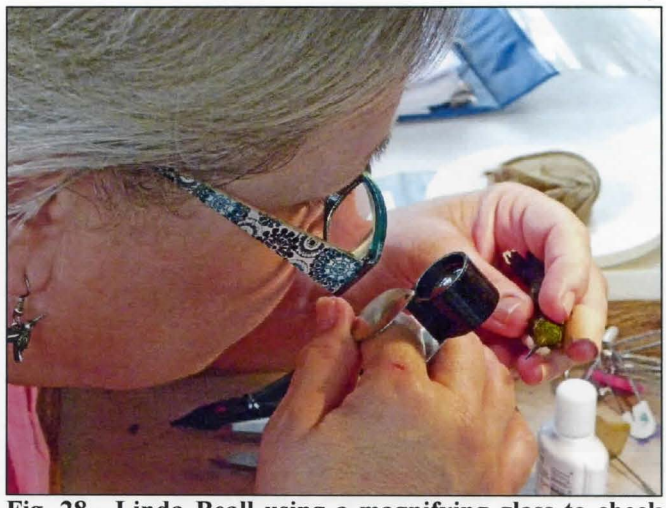

Fig. 28. Linda Beall using a magnifying glass to check proper position of band on a Ruby-throated Hummingbird. Out of the 31 individuals banded, all were Ruby-throated and all had fat accumulations—a necessary asset for migrating.

Fig. 29. Linda Beall educating a visitor on the art of releasing a delicate hummingbird.

Fig. 30. A European honeybee (*Apis mellifera*) exhibit by a local beekeeper.

Fig. 31. Exhibit displaying various kinds of honey due to different flower nectars and pollens.

Fig. 32. Visitors tasting different kinds of honey.

Fig. 33. Kids' activities were designed to teach the role of pollinators in the landscape. Pictured is a station to disseminate information on a "scavenger hunt." Large plant in the container is a blue flowering giant milkweed (*Calotropis gigatea*), a native of Southeast Asia and Tropical Africa, and an excellent host plant for Monarchs.

Fig. 34. An "artsy" caterpillar painted on stones to catch the attention of kids. The straw figure added a fall/Halloween touch.

Fig. 35. A demonstration of how to plants seeds—either immediately or delayed until the following spring.

Fig. 36. A hands-on exhibit for constructing a house for mason bees (*Osmia*), several species of which are native to North America and important pollinators. These bees are solitary and do not produce honey or wax.

Fig. 37. Vendors marketing plants, especially those that attract pollinators.

Fig. 38. A visitor learning about cassia (*Senna corybosa*) and porterweed (*Stachytarpheta jamaicensis*) for important additions to her pollinator garden.

Fig. 39. Vendors plying their wares. Six craft booths along with six food booths participated.

Fig. 40. Vendor marketing garden accoutrements.

Fig. 41. Ken Basso (Baton Rouge Butterfly Enthusiasts) sharing his knowledge and photographs of local butterflies with visitors.

Fig. 42. A local professional delivering a program on the benefits and dangers of GMOs. Nineteen programs were delivered, most in shaded venues.

(Gary N. Ross, E-Mail: GNRoss40@yahoo.com)

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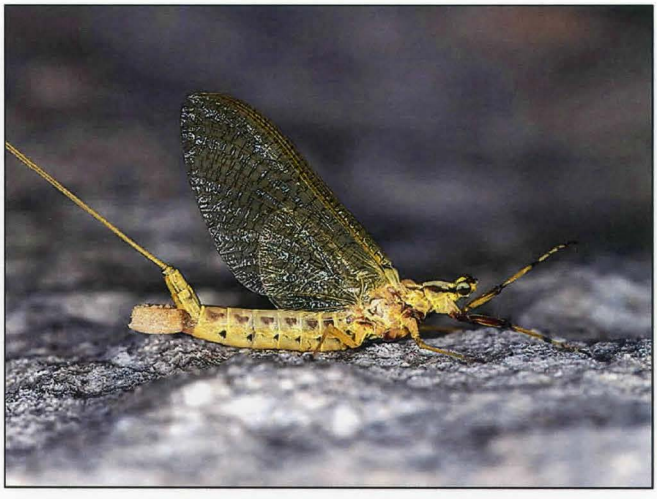
Giant Mayfly photographed at Silver Falls Rest Area near Crosbyton, Texas. Note the egg sack. (July 22, 2017, James Bowers).



(Continued from page 276)

"Blue moon" [1]

A second full moon in one calendar month is usually called a ***"blue moon"*** and this occurs approximately every 3 years. The saying ***"Once in a blue moon"*** refers to something that does not happen often (like a ***blue moon***.)

However, a ***"blue moon"*** can also refer to the third full moon in a season with four full moons.

For a very detailed explanation of a Blue Moon and the problems and errors of the historical definition see the excellent article by:

> Sinnott, Roger W., Donald W. Olson, and Richard Tresch Fienberg (May 1999). "What's a Blue Moon?". Sky & Telescope. Retrieved 2008-02-09. "The trendy definition of "blue Moon" as the second full Moon in a month is a mistake."

DATES OF NEW MOON AND FULL MOON FOR 2018 [2]

NEW MOON	FULL MOON
	January 1
January 16	January 31
February 15	March 1
March 17	March 31
April 15	April29
May 15	May 29
June 13	June 27
July 12	July 27
August 11	August 26
September 9	September 24
October 8	October 24
November 7	November 22
December 7	December 22

2) https://www.calendar-12.com/moon_phases/2018

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Bison in Caprock Canyons State Park (nr. Quitaque, Texas)(August 30, 2017)

PHOTOGRAPHS TAKEN DURING THE SOUTHERN LEPIDOPTERISTS' SOCIETY ANNUAL MEETING

BY

JEFFREY SLOTTEN

The annual meeting of the Southern Lepidopterists' Society and the Association for Tropical Lepidoptera was held this year (2017) at the McGuire Center for Lepidoptera and Biodiversity in Gainesville, Florida, on September 22-24.

Our Chairman, John Douglass, is on the left and James Hayden is on the right.

Leroy Koehn at his joking best giving a lecture on *Colias philodice* and *Colias eurytheme* rearing and differential wing phenotypes.

Here is a photo of our first collecting site at Goethe State Forest. It is a mix of pine and oak with an understory of wire grass, bluestem and composities.

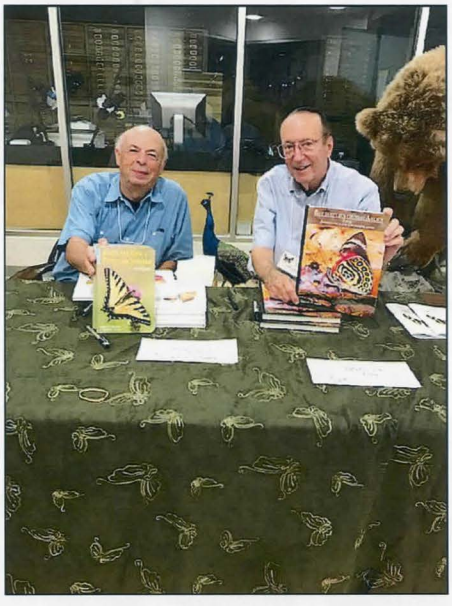
Julieta Brambila is posing with a non-member grad student in front of the McGuire Center.

David Fine and his father Larry. David has a very informative talk on his Website "Keys Moths."

Two of our distinguished members, John Calhoun and Bob Belmont.

Here we are at the daytime field meeting of the Southern Lepidopterists' Society. The cast of characters are Brian Scholtens, Stuart Marcus, Sharalee Dias, Jeff Slotten (boy am I small in stature), and the young and eager Riley Gott.

A larva of the attractive arctiid *Grammia placentia* on *liatris* at Goethe State Forest during our field meeting.



James Monroe and Tom Emmel at the book signing desk. James Monroe was selling his new book "The Butterflies of Pennsylvania".

(Jeff Slotten, E-Mail: jslotten@bellsouth.net)

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Cotton is King in Texas, especially in West Texas (November 2, 2017).

LATE SEASON VISITORS TO THE ABITA ENTOMOLOGICAL STUDY SITE - 2017

BY

VERNON ANTOINE BROU JR. AND CHARLOTTE D. BROU

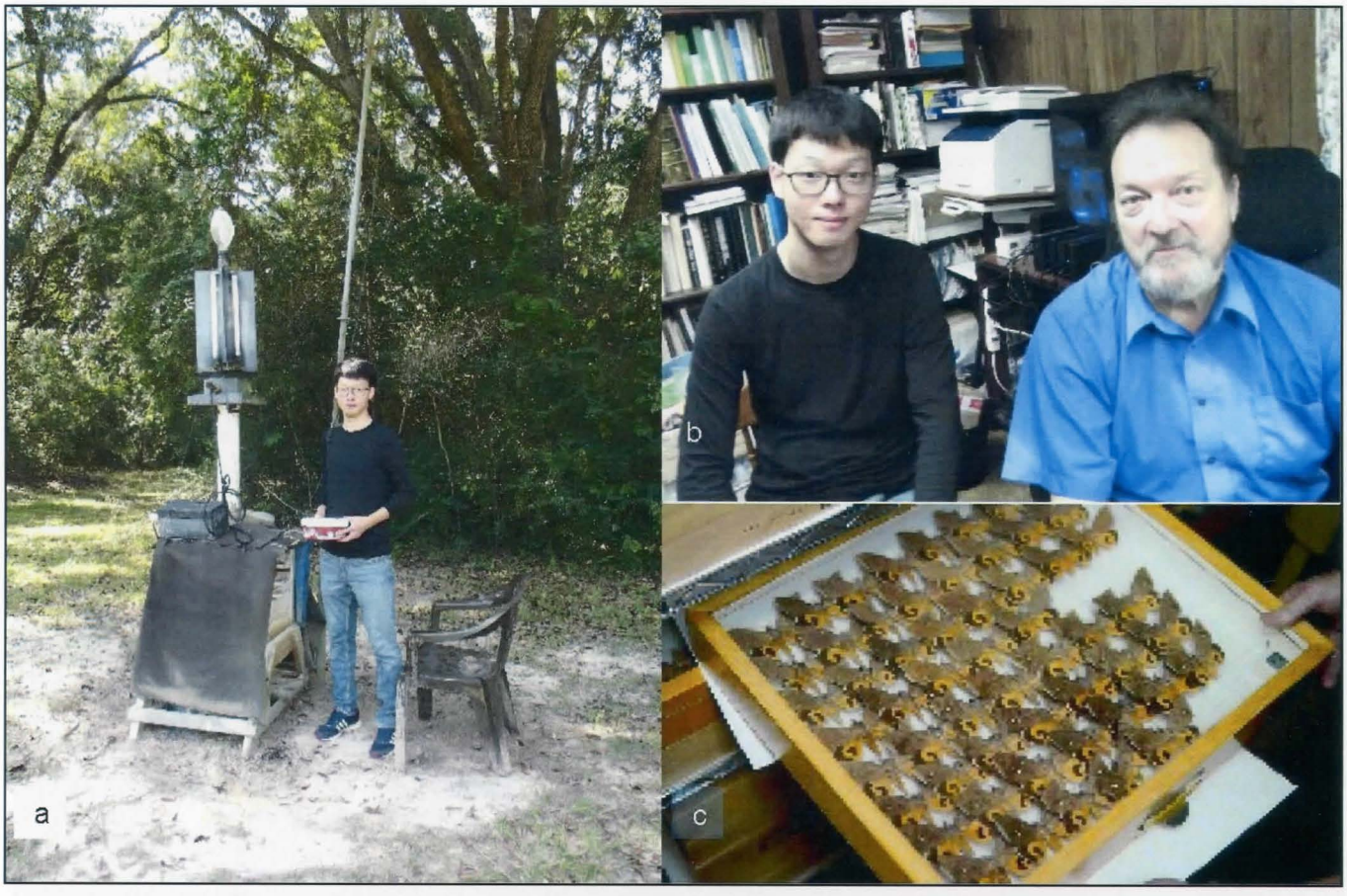
A few of many assorted images (**Figs. a-w**) taken on August 6, 2017, by Katherine Gividen and Curt Auzenne while visiting Vernon and Charlotte Brou. Curt is an environmental scientist for the state of Louisiana. Katherine is a Louisiana Master Naturalist with the Greater Baton Rouge chapter, and serves as the organization's facilitator for both the Arthropod, and Nocturnal Naturalist workshops. Katherine's e-mail is katherine@thehaplesshiker.com

a. Katherine Gividen (center) and Curt Auzenne (left) visiting Vernon (right), **b.** Vernon in collection storage with a drawer of Louisiana ***Catocala***, **c.** Vernon and one of his stationary light traps #1, **(d, e)** assorted insects in the research collection, **f.** chemical floral attractants trap, **g.** one of several dozens of operating dung beetle traps, **h.** bio-hazard label on dung beetle trap, **j.** isopropyl alcohol beetle trap.

Katherine Givіden and Curt Auzenne visiting Vernon and Charlotte Brou (continued from page 1).

k. mature larvae of ***Callosamia securifera*** being reared upon ***Magnolia virginiana***, **m.** one of numerous ***C. securifera*** awaiting placement into collection storage, **n.** several of the 650 Cornell drawers filled with spread and pinned labeled Louisiana insects, **(o-w)** assorted insects in the research collection.

A few of images (**Figs. a-c**) taken on October 12, 2017, of Junsuk Kim while visiting Vernon and Charlotte Brou, at the Abita Entomology Study site near Abita Springs, Louisiana. Junsuk is interested in, and specializes in, the taxonomy of Nearctic scarab beetles. He lives in the center of the state, Alexandria, Louisiana. His e-mail is bgjkim@outlook.com. Junsuk graduated in 2015 from the University of Nebraska-Lincoln (Lincoln, Nebraska) with a bachelor's degree in entomology. His senior thesis concerned the Neotropical dynastine scarab beetle genus ***Golofa*** (Coleoptera: Scarabaeidae: Dynastinae) (http://museum.unl.edu/research/entomology/Guide/Scarabaeoidea/Scarabaeidae/Dynastinae/Dynastinae-Tribes/Dynastini/Golofa/Golofa.html), **a.** Junsuk getting a close look at one of Vernon's stationary light traps, **b.** Junsuk on left, Vernon on right, **c.** One of Vernon's many drawers of spread, labeled, and determined of the Erebidae genus of world ***Eudcima***.



A few images (**Figs. a-d**) taken on October 21, 2017, during a stopover by Alex and Victoria Bic visiting Vernon and Charlotte Brou, at the Abita Entomological study site, near Abita Springs, St. Tammany Parish, Louisiana. **a.** Alex left, and Victoria center, operate Bic's Bugs and specialize in worldwide butterflies and other insects. The Bics live in southern, Arizona. Their e-mail is bicaliber@gmail.com,Vernon on right, Charlotte Brou behind camera, **b.** Alex and Victoria looking over a cabinet of Louisiana Saturnidae, **c.** Alex and Vernon looking over one of many drawers of the largest world collection of the Erebidae genus ***Eudocima***, Victoria behind camera, **d.** The Bics heading out of the door with some Louisiana insects.

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

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MISOGADA UNICOLOR (PACKARD, 1864) (LEPIDOPTERA: NOTODONTIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

Fig. 1. ***Misogada unicolor*** phenotypes: a. male, b. female.

The greenish-gray in color notodontid moth, ***Misogada unicolor*** (Packard) (Fig. 1) is more often found in the eastern United States, south of the Great Lakes to Florida and Texas. This species was described by Packard in 1864 as ***Lochmaeus unicolor***, though Packard (1864) also described ***Lochmaeus marina***. Popenoe (1888)

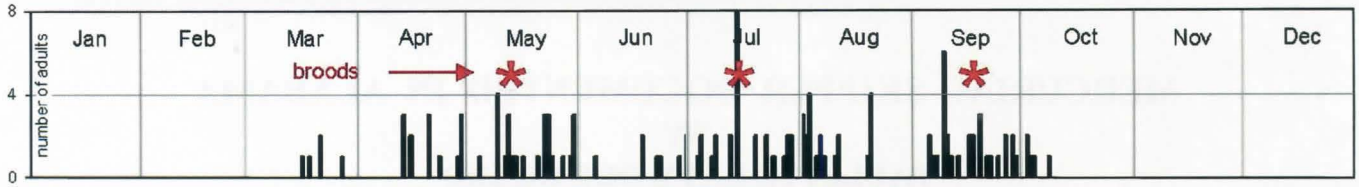

Fig. 2. Adult ***Misogada unicolor*** captured in Louisiana. n = 140

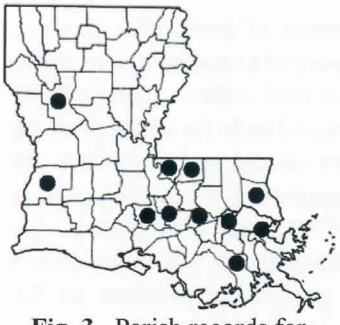

Fig. 3. Parish records for ***Misogada unicolor***.

page 199-202, provided a nice life history of ***unicolor***, illustrating (drawings) the adults and larvae of ***unicolor*** and referred to the larvae of this species as the *'sycamore fork-tail'*. Popenoe sent several larvae to Packard who remarked "... my ***Lochmaeus unicolor***, of which my ***L. marina*** is with little doubt a synonym". Packard (1895) listed the distribution of ***unicolor*** to include: Arkansas, District of Columbia, Kansas, Massachusetts, Missouri, New York, New Jersey, Ohio, Virginia, and Texas.

Covell (1984) listed the range of ***unicolor*** to include Massachusetts to northern Florida, west to Missouri and Texas, (adults) in the months April to September. Heppner (2003) listed the range of ***unicolor*** to include Massachusetts to Florida, and Missouri to Texas, (adults) in the months March, and May to August. This species was not covered by Heitzman and Heitzman (1987), nor by Powell and Opler (2009). Forbes (1948) stated the range of ***unicolor*** to include Massachusetts to Kansas, south to Alabama and Texas. Knudson and Bordelon (1999) included ***unicolor*** in their Texas Lepidoptera Survey Checklist.

Among numerous hundreds of adult ***unicolor*** I have taken in light traps over the past 48 years, there is little variance in its appearance, regarding both color and maculation. Within Louisiana, there are three annual broods of ***unicolor,*** first peaking second week of May, and subsequently at approximately 65-day intervals (Fig. 2).

Popenoe (1888), Heppner (2003), and Covell (1984), listed the larval foodplant of ***unicolor*** to be (Sycamore) ***Plantanus occidentalis*** L., though Covell included 'cottonwood' as well. The range for ***unicolor*** mostly mimics the range of the reported larval foodplant ***P. occidentalis***. Wagner (2005) questioned the inclusion of cottonwood as a larval foodplant.

The confirmed parish records within Louisiana 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)

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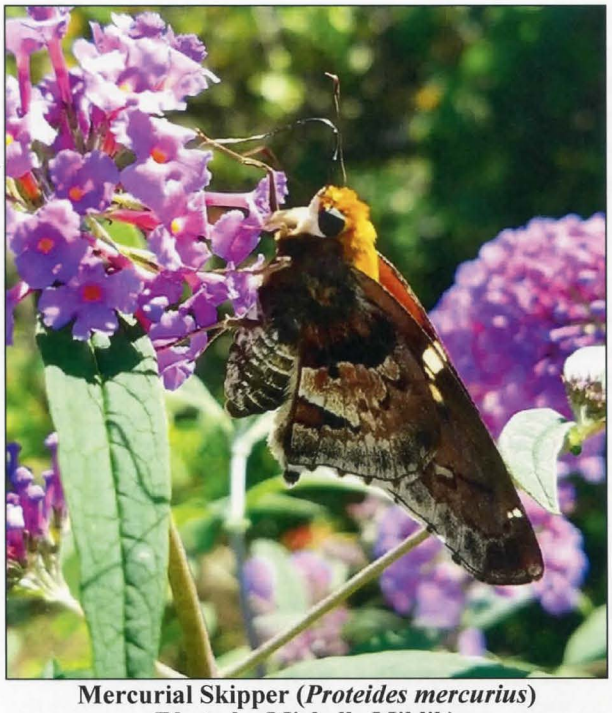
MERCURIAL SKIPPER DOCUMENTED IN ALABAMA

BY

PAULETTE HAYWOOD OGARD



Mercurial Skipper (*Proteides mercurius*) (Photo by Michelle Miklik).

Michelle Miklik often takes pictures of butterflies at Cane Creek Community Gardens, a 17-acre site located in Anniston, Alabama on the former site of Fort McClellan. Although the garden is primarily composed of raised beds for vegetables, its periphery is full of flowers that are visited by butterflies. On June 26, 2017, Michelle photographed 2 Fiery Skippers, a Common Buckeye, a Cabbage White, and a "mystery" lep with a golden-orange head: she wasn't sure whether it was a butterfly or a moth. When she posted her pictures on the Butterflies of Alabama Facebook group page, the orange-headed bug was identified as a Mercurial Skipper, a tropical species that sometimes strays to Florida, Texas, and Louisiana. This is the first known record for Alabama, and Mercurial Skipper became the 158th species included in the new online Alabama Butterfly Atlas (www.alabama.butterflyatlas.usf.edu). Although a search was conducted the following day, the skipper was not seen again. Michelle continues to photograph at the Gardens, hoping that lightning will strike twice!

(Paulette Haywood Ogard, E-mail: habitatdesigns@hotmail.com)

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PHRYGIONIS PRIVIGNARIA GUENÉE 1857 (LEPIDOPTERA: GEOMETRIDAE) IN ALABAMA

BY

ROBERT LORD ZIMLICH AND VERNON ANTOINE BROU JR.

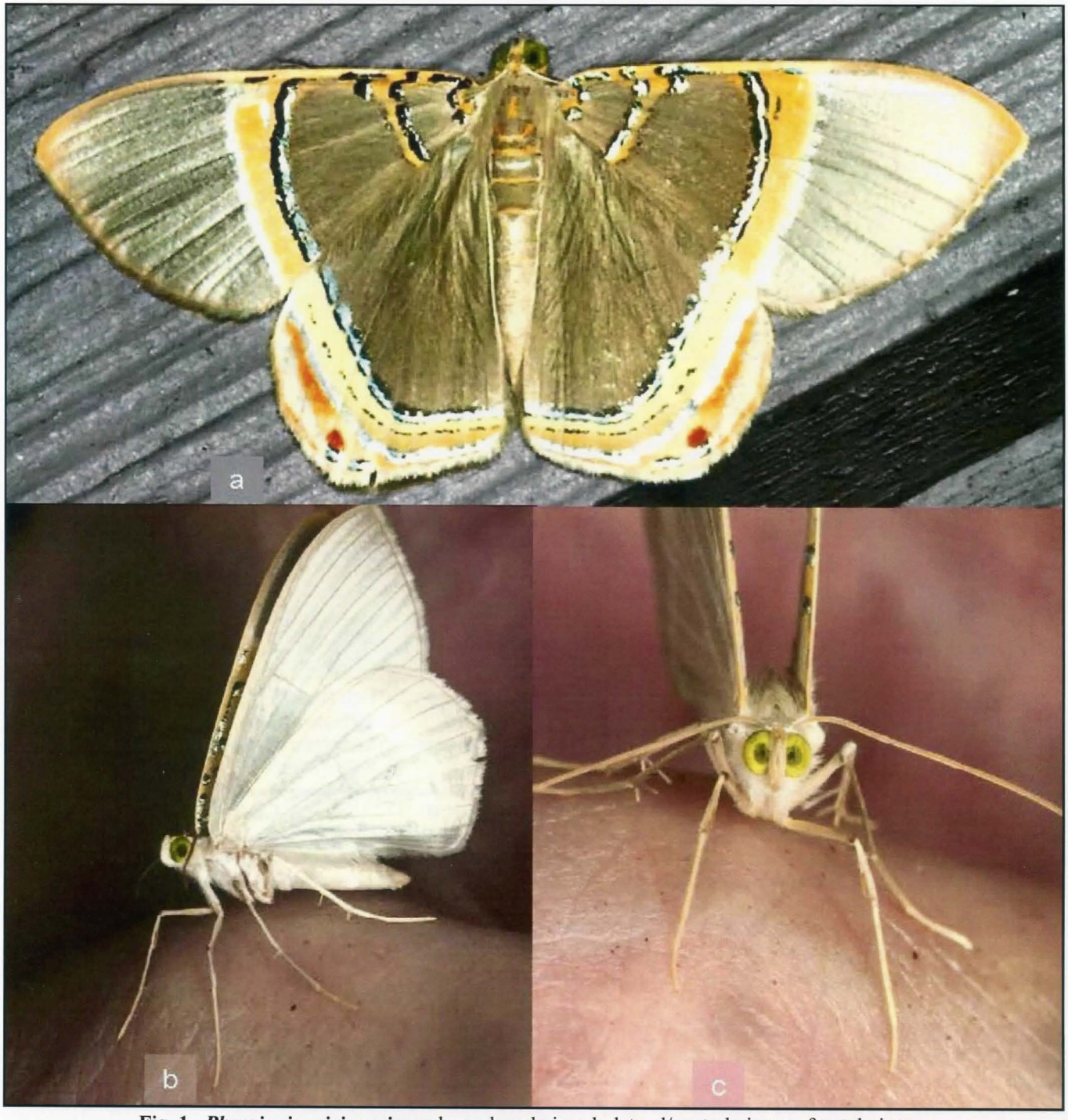

Fig. 1. ***Phrygionis privignaria***, male: a. dorsal view, b. lateral/ventral view, c. frontal view.

On October 8, 2017, @ 9:51 PM CDT the senior author photographed a remarkable excellent quality specimen of a rarely encountered tropical species of geometrid moth, ***Phrygionis privignaria*** Guenée (Fig. 1). The specimen was found and photographed at 1911 Navco Road, Mobile, AL 36605. Coordinates: 30.622727, -88.105726. This specimen appears to be a male, and is a new occurrence record for the state of Alabama, and apparently only the fourth known specimen to be recorded within the United States.

This species was first captured and documented in the U.S. at Lake Brownwood State Park, Brown County, Texas, on October 15, 1965, by Andre Blanchard (Bordelon & Knudson, 2000), and the second specimen of ***privignaria*** was captured also in Texas 28 years later, nearer to the east Texas border, approaching Louisiana by Charles Ely at Nacogdoches, Nacogdoches County, Texas, on July 12, 1993 (Bordelon & Knudson, 2000). The third U.S. record of ***privignaria*** was captured December 12, 2009, in the southeastern area of the state of Louisiana somewhat near to the Mississippi border, sec.24,T6,SR12E, 4.2 mi. NE of Abita Springs (aka Abita Springs entomological study site) (Brou, 2010). With each of these rare reporting's, ***privignaria*** evidently is marching eastwardly, along the Gulf Coastal areas towards the state of Florida. Of the four U.S. records for ***privignaria***, these are the only known images of a live adult specimen.

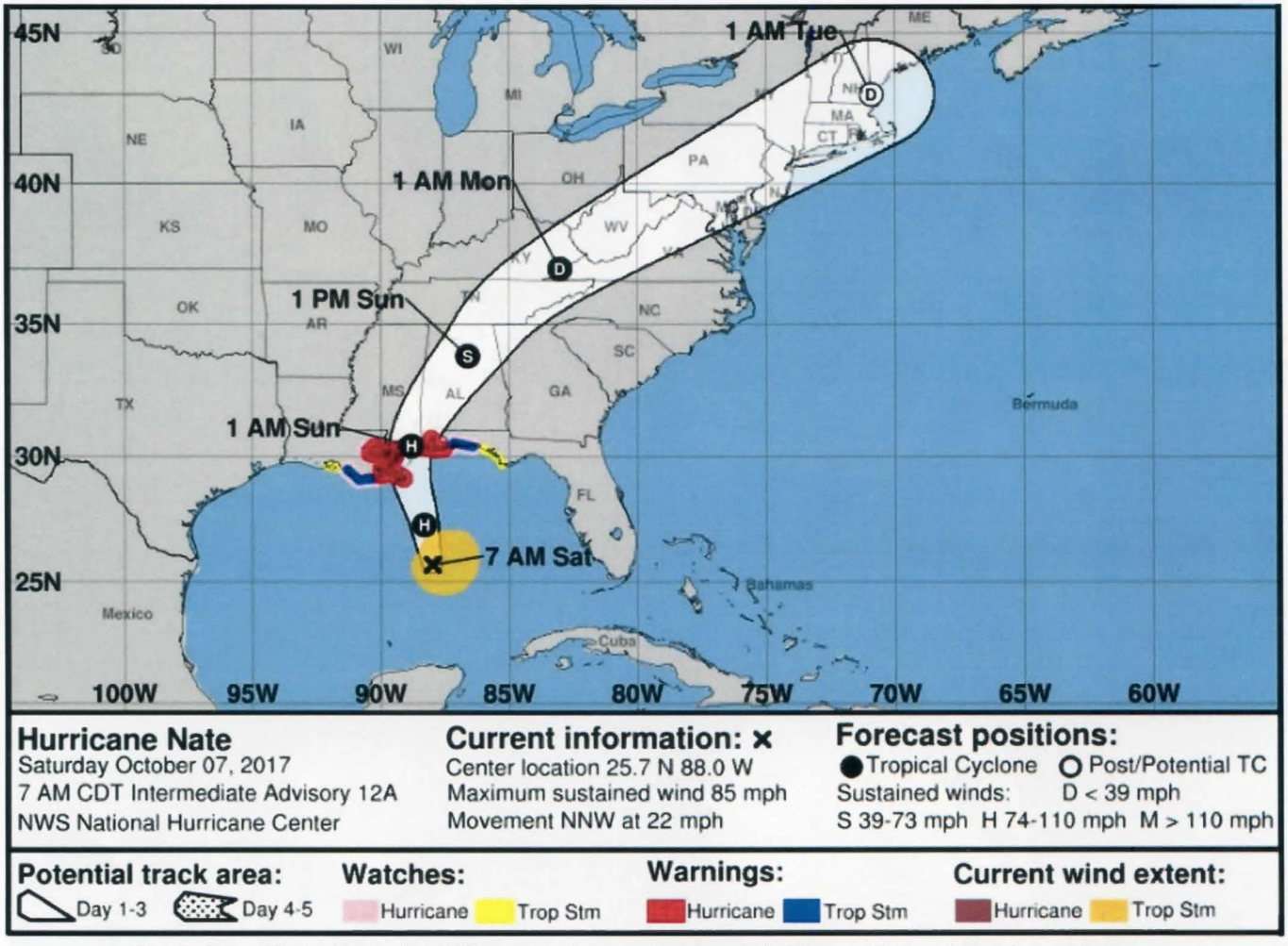

Fig. 2. Map illustrating path of *Hurricane Nate* on October 7, 2017, per National Hurricane Center.

Brou (2010) provided a five-page comprehensive treatise concerning this species, including a review of past records, past identities (species names), and synonymies, possible foodplants, and literature corrections, involving three species of the genus ***Phrygionis*** Hübner occurring within the U.S.

The junior author has documented dozens of similar new tropical lepidoptera occurrences over the past half century within the state of Louisiana. More often than not, with each passing of tropical storms and tropical hurricanes across the coast of Louisiana, these weather phenomena have brought with them, tropical species of lepidoptera, especially found or discovered within the geographical areas eastward of the eyes of these meteorological events. In recent months, southeast Louisiana was just east of the eye of a major devastating hurricane and a tropical storm. At the same time of these weather events six new Louisiana state record moths were captured at the **Abita Entomological Study Site* in St. Tammany Parish, Louisiana, USA. These six new state records occurred despite operating a series of high wattage light traps continually at this location every single night for the past 34 years.

This fourth U.S. record for ***privignaria*** arrived with *Hurricane Nate* (Fig. 2), as it made landfall at 12:30 AM CDT near Biloxi, Mississippi, 60 miles SW on October 8, 2017. In the wake of '*Nate*', this remarkable and colorful tropical species, ***Phrygionis privignaria*** was discovered and photographed. The senior author is unaware of

any plants of the genus ***Ardesia*** occurring in his immediate location, but ***Ardesia crenata*** Sims (Fig. 3) has been reported at least five times in both Mobile County, Alabama, and adjoining Baldwin County, Alabama, according to the USDA Plant Database. Both of these coastal Alabama counties were within the path of, and just east of the eye of '*Hurricane Nate*'. The highly and aggressively invasive plant ***Ardesia crenata,*** often mistakenly assumed by the uninitiated, to be a useful and colorful ornamental plant, is the suspected foodplant for moths of the genus ***Phrygionis*** across the southern Gulf Coastal states. In recent decades, this highly invasive pest plant species appears to have rapidly spread across the coastal counties and parishes of all the Gulf Coastal states from Florida to Texas.

Fig. 3. ***Ardesia crenata*** Sims, these two examples, among hundreds were photographed from near Abita Springs, St. Tammany Parish, Louisiana, the location of the third U.S. record of ***P. privignaria.*** Note bright red berries below, and new delicate tiny white flowers above.

A prime example of a '*renaissance man*', the senior author has an ongoing yen for learning, be it a degree, diploma, certification, or just to collect more CEUs. He is a professional artist, a professional event photographer, an insect photographer (one of the top insect photographers in North America, involved with long lists of numerous organizations, e.g., Board of Directors and several positions as presidents and directors of various associations, in addition to becoming a new member of the Southern Lepidopterists' Society. For those photographers among us, Robert provided the following useful data: Camera used Canon EOS 50D, lens used Canon 100 mm Macro, ISO 200, f/25, 1/200 sec, ring flash 1/8 power. The authors thank Bob Belmont and Charles V. Covell for commenting upon the identity of this remarkable moth record. This specimen was photographed, but not captured.

**Abita Entomological Study Site*: sec.24,T6,SR12E, 4.2 miles NE of Abita Springs, St. Tammany Parish, Louisiana, USA

Literature Cited

Brou Jr., V.A., 2010. Phrygionis privignaria Guenée 1857 (Lepidoptera: Geometridae) in Louisiana. *South. Lepid. News* 32: 35-39.

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(Robert Lord Zimlich, 1911 Navco Road, Mobile, Alabama 36605; E-mail: zimbobway@netzero.net
Vernon Antoine Brou Jr., 74320 Jack Loyd Road, Abita Springs, Louisiana 70420; E-mail: vabrou@bellsouth.net)

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SLS 2017 BUSINESS MEETING MINUTES

Chairman John Douglass called the meeting to order at 4:48pm on Saturday, September 23, 2017, at the McGuire Center conference room, Florida Museum of Natural History in Gainesville, Florida.

The following members signed the attendance sheet:

James Adams	Lance Durden	Steve Mix
Eric Anderson	Rick Gillmore	Jim Monroe
John Calhoun	Jon Turner	Thomas Neal
Jeff Slotten	Leroy Koehn	Don Tangren
Robert Beiriger	Debbie Matthews	Pete Van Zandt
Matt Cousins	Jackie Miller	Brian Scholtens
Charlie Covell	Marc Minno	John Douglass

John Douglass summarized 2016 minutes. Motion to accept was APPROVED.

TREASURER'S REPORT:

Jeff Slotten presented a financial summary through August 31, 2017. Due to estate and member donations, SLS had a good year financially. Comments on the value of our editor Barry and his excellent SL NEWS were shared by all present.

MEMBERSHIP COORDINATOR, WEBSITE MANAGER:

Marc Minno and Dave Morgan highlighted various topics including emails, membership lists, official publications, and other matters.

OLD BUSINESS:

Debbie Matthews related successful scanning of many years of SLS publications. Additional discussion of past programs, special publications, and archiving took place. Discussion of adding a fourth member-at-large was tabled.

NEW BUSINESS:

Secretary presented election results for 2018-2019: Chairman, John Hyatt; Member-at-Large (3), James Adams, Matthew Blaine, Pete Van Zandt; Secretary, Richard Gillmore. All current appointed officers have agreed to serve another term.

SLS CONSTITUTION:

Changes were voted on and APPROVED with minor changes with the exception of Proposal 5 (John Abbot Award) which was approved with SIGNIFICANT AMENDMENT.

John Douglass led a discussion on our election balloting and whether email elections might be considered.

MEETINGS:

Locating the 2018 SLS meeting at another site was proposed and a committee established for that purpose. Having the meeting after the height of hurricane season was briefly discussed along with a very preliminary idea for the 2018 meeting at an academic institution in Georgia.

Unanimous thanks were offered to Jackie, Debbie, and all who make the Gainesville meetings so efficient, professional, and enjoyable.

Meeting adjourned for banquet at 5:40pm.

Steve Mix, Secretary pro tem

CONSTITUTIONAL CHANGES RECENTLY APPROVED

BY

JOHN F. DOUGLASS

At the Society's Business Meetings on **October 29, 2016, and September 23, 2017**, several proposals were discussed, modified as needed, and then unanimously approved by **members in attendance**. The procedure used in introducing these changes (Proposals 2016.1a through 2017.5, below) is prescribed in the following passage in the Constitution of September 15, 2012: "ARTICLE 11, AMENDMENTS. 1. This constitution may be amended by motion made, seconded, and passed by a majority vote of the members present at the annual meeting and concurred in by a 3/4 affirmative vote of the Board."

The adopted changes are detailed below. They are intended to improve certain procedures, and to define others. The new passages are **recommended for assimilation into the next draft of the SLS Constitution**.

PROPOSAL 2016.1a [approved October 29, 2016]

RE: SLS Constitution, **ARTICLE 5:** OFFICERS AND BOARD OF DIRECTORS

1) Present wording, ARTICLE 5.1:

"The officers shall be: A Chairman, an Editor, a Website Manager, two Members-at-Large, a Secretary, a Treasurer, and a Membership Coordinator.

These officers as a group shall constitute the Board of Directors."

2) Proposed wording, ARTICLE 5.1:

"Five elected and four appointed officers as a group shall constitute the Board of Directors.

The elected officers shall be: a Chairman, a Secretary, and three Members-at-Large.

Appointed officers shall be: an Editor, a Treasurer, a Membership Coordinator, and a Website Manager.

Each appointed officer shall be approved by a simple majority vote of the Board, with term limits to be determined by the Board.

When vacancies occur in these offices, appointments shall be made by the current Chairman with the approval of a simple majority vote of the Board."

PROPOSAL 2016.1b [approved October 29, 2016]

RE: SLS Constitution, **ARTICLE 5:** OFFICERS AND BOARD OF DIRECTORS

1) Present wording, ARTICLE 5.2, sentence 1:

"The Chairman shall annually appoint a nominating committee of three members of the Society."

2) Proposed wording, ARTICLE 5.2, sentence 1:

"The Chairman shall biennially appoint a nominating committee of three members of the Society."

PROPOSALS 2017.1 through 2017.4

RE: SLS Constitution, **ARTICLE 5:** OFFICERS AND BOARD OF DIRECTORS

Present wording, ARTICLE 5.3, sentence 2: "Duties of the officers shall be those normally pertaining to the respective offices."

PROPOSAL 2017.1 [approved September 23, 2017]: **Proposed** wording, ARTICLE 5.3(a):
"The duties of the **Chairman** shall include:

(a) presiding at Board of Directors meetings and at the annual Business Meeting;

(b) soliciting agenda items and circulating an agenda to Board members prior to the annual Business Meeting;

(c) appointing special committees as needed, and specifying dates for reporting of their recommendations;

(d) biennially appointing a Nominating Committee to fill anticipated vacancies on the Board;

(e) biennially appointing an Abbot Award Nominating Committee;

(f) annually appointing a Field Coordinator;

(g) establishing, with the Membership Coordinator, a date for issuance of the biennial Membership List;

(h) providing a biennial report to members about Society developments."

PROPOSAL 2017.2 [approved September 23, 2017, to replace Proposal 2016.2 of October 29, 2016]:
Proposed wording, ARTICLE 5.3(b):
"The duties of the **Membership Coordinator** shall include:

(a) overseeing the Society's efforts to increase and maintain its membership;

(b) updating and publishing of a biennial Membership List, specified in Article 8.1, to include addresses, telephone numbers, e-mail addresses, and the interests of members;

(c) providing copies of a corrected Membership List to the Society's Treasurer and Editor annually, and updating these officers as changes occur."

PROPOSAL 2017.3 [approved September 23, 2017]: **Proposed** wording, ARTICLE 5.3(c):
"The **Field Coordinator** shall:

(a) be appointed annually by the Chairman, to serve for one calendar year;

(b) arrange for the planning and execution of at least one annual field trip, including choosing of an appropriate locale, hosting or arranging for local hosting of the trip, procurement of necessary collecting permits, and publicizing of the trip."

PROPOSAL 2017.4 [approved September 23, 2017]: **Proposed** wording, ARTICLE 5.3(d):
"The duties of a **Member-at-Large** shall include:

(a) participating in discussions of agenda items with other Board members;

(b) serving on committees as requested by the Chairman;

(c) assisting other Board members with organizational details."

PROPOSAL 2017.5 [as modified and approved September 23, 2017, to take effect the same day]

RE: SLS Constitution, **ARTICLE 7:** AWARDS

John Abbot Award

1) Present wording, ARTICLE 7.1: "The John Abbot Award may not be given more often than once a year.

The Board will submit a ballot containing names of three eligible recipients to the members with the announcement of the annual meeting.

The candidate receiving the largest number of votes by return of this ballot to the Secretary will be the recipient.

The award recognizes exceptional contribution to the purpose of the society through publication and otherwise.

A person does not need to be a member of the Society to be eligible.

The nominees not receiving the award in any year will remain on the ballot the year following with at least one additional name being added annually by the Board.

In the case of a tie, the candidate who has been in contention the longest will be selected."

2) Proposed wording, ARTICLE 7.1:

sentence 1: "The Abbot Award is intended to recognize an individual or group which exemplifies the highest standards in lepidopterology, in academic work and/or service to the Society and advancement of its goals.

sentence 2: The Award is conferred at irregular intervals, but typically no more than one time per year.

sentence 3: Preference shall be given to candidates whose involvement in lepidopterology has emphasized the U.S. Southeast.

sentence 4: Nominations shall be invited year-round from the Society's membership.

sentence 5: For consideration in any particular year, names must be submitted no fewer than 90 days before the next-subsequent Annual Meeting of the Society.

sentence 6: A person need not be a member of the Society to be eligible for the Award.

sentence 7: Nominees shall be vetted by the Board of Directors and by a Nominating Committee, and one candidate shall be selected as the winner.

sentence 8: The winner's name shall be announced at the Annual Meeting and in the newsletter of the Society."

PROPOSAL 2017.6 [approved unanimously by the Board of Directors, October 6, 2017]

RE: SLS Constitution, **ARTICLE 11:** AMENDMENTS

Proposed wording, new ARTICLE 11.2: "In order to mitigate specific disruptions which may arise in the life of the Society, the Board shall have the authority to establish, by simple majority vote, measures intended to protect the Society's members and to ensure its continuity of governance, specifically by:

(a) replacing officers who may be unable or unwilling to serve, and establishing terms of office for their replacements;

(b) enacting policies intended to protect individual members or groups from harassment (verbal, textual, electronic, other)."

Royal Walnut Moth (*Citheronia regalis*), gouache on wood, by Yvonne C. Byers.

(John Douglass: jfdouglass7@gmail.com)

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TREASURER'S REPORT FOR 2017
(AS OF AUGUST, 2017)

There are 160 paid members and two complimentary issues sent out quarterly (Library of Congress and Library at Division of Plant Industry in Gainesville, Florida).

Beginning Bank Balance with SunTrust of Gainesville as of 1-January-2017: $6891.33
Ending Balance as of 31-August-17: $16,864.91

Deposits and Credits: Includes member dues and donations, collections from meetings and sales of old newsletters: $17,964.31. (Irving Finkelstein's estate provided $9,108.30 for the Southern Lepidopterists' Society on 18-June-2017.)

Withdrawals and Fees: $7,990.73

Printing Newsletters:
- Vol. 39 #1 $1,692.18
- Vol. 39 #2 $2,410.50 (over half paid by donation)

Postage for Newsletters:
- Vol. 39 #1 $685.70
- Vol. 39 #2 $741.50

Supplies for Newsletters: $86.00

Bank Fees: $6.00 (deposit correction fee)

Extra Newsletters Postage: $13.60 (Linda Auld sponsored Louisiana Lepidoptera Fest)

Printing Costs include printer cartridges for Editor Barry Lombardini's home computer.

Newsletter Budget

Due to the generosity of several members we have continued to produce excellent newsletters.

It costs an average of $2,377.88 ($1,943.44 last year) to produce a newsletter this year. This costs the society about $9,511.52 ($7,773.77 last year) for four issues. Increased cost was offset by donations.

We have 160 paid members. If every member paid $35, that would bring in only $5,600.

Dues

Dues are currently:

Student Membership:	$15.00
Regular Membership	$30.00
Sustaining Membership	$35.00
Contributor Membership	$55.00
Benefactor Membership	$75.00
Publication Fund (donations)	open ended

Respectfully Submitted:
Jeffrey R. Slotten DDS
Research Associate McGuire Center
FSCA, SLS Treasurer 2017

WELCOME TO OUR NEWEST MEMBERS

Mike Rich
300 Lake Eva Dr.
Chuluota, FL 32766

Stuart J. Marcus
P.O. Box 463
Liberty, TX 77575

Laura E. Gaudette
1721 NE 75th St
Gainesville, FL 32641

Eric Smith
215 West Hillcrest Drive
Mountain City, TN 37683

Gayle G. Sanders
4062 Brockett Creek Dr.
Tucker, GA 30084

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MANY THANKS TO THE FOLLOWING DONORS TO THE SOUTHERN LEPIDOPTERISTS' SOCIETY (LAST QUARTER)

Sustaining	Contributor	Benefactor +
John Douglass	***Kelly Richers***	***Frances Welden***
Jeffrey Belth	***Gayle G. Sanders***	***Bob Patterson***
Laura E. Gaudette		
Jim Goetz		
Steve Hall		

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Sunset in Caprock Canyons State Park nr. Quitaque, Texas (August 30, 2017)

IDENTIFICATION OF LICHEN MOTHS IN THE GENUS *CISTHENE* Walker 1854 (EREBIDAE: ARCTIINAE) IN THE CENTRAL AND EASTERN UNITED STATES

BY

CHUCK SEXTON AND HUGH McGUINNESS

Twenty species of the lichen moth genus *Cisthene* Walker (Erebidae: Arctiinae: Lithosiini) occur in the United States (Ferguson & Opler 2006; Schmidt & Opler 2008; Lafontaine & Schmidt 2010, Pohl et al. 2016), of which at least 13 species are found in the central and eastern US (Heppner 2003, Knudson & Bordelon 2010, Moth Photographers Group 2017). The original descriptions of many of the species in early literature are brief and ambiguous. Some species were described when only one or a few specimens were available thus the full range of variation was not understood (Stretch 1885, Ottolengui 1899, Kellogg 1906, Barnes & McDunnough 1913, Barnes & Benjamin 1925). Other descriptions encompassed what would later be determined to be multiple species (Walker 1854, Harvey 1877, Snow 1905, Barnes & McDunnough 1916, 1918). Knowlton (1967) was the latest author to address the identification of the North American *Cisthene* fauna in detail.

Most North American *Cisthene* share a general set of phenotypic elements (e.g., location of color patterns) but there is often variation within each species. This led Knowlton (1967) to provide limited information on determination by pattern and to rely heavily on genitalic differences for species recognition. Thus, the combination of brief descriptions in early literature and Knowlton's treatment has hampered the identification of specimens and photos by non-specialists for the past half century. In addition, the existing information on identification using color patterns and other superficial characters is widely scattered and often difficult to find, and much of it remains subject to the caveats mentioned previously (e.g., Neumoegen & Dyar 1893; Holland 1903; Dyar 1904; Covell 1984; Powell & Opler 2009). Even modern works are not immune to error; the illustration of Packard's Lichen Moth in Beadle & Leckie's recent field guide (2012, p. 293) clearly shows an example of the Lead-colored Lichen Moth.

Here we offer a dichotomous key to aid in the identification of specimens and images of the 13 species of *Cisthene* found in the central and eastern US and provide species summaries that include additional identification, range, and habitat notes. Much of the present material was initially published in draft form on iNaturalist.org (Sexton 2017a,b).

A simple key and a set of succinct descriptions cannot fully capture the variation in pattern in the several *Cisthene* species. Nor can they be expected to resolve some of the more difficult challenges for field or photographic identification. We endeavor not to over-simplify such difficulties with the present contribution while clarifying and updating information on this set of species garnered over the past several decades.

Methods

The region considered in this paper includes all of the United States from the Rocky Mountains and Texas east to the Atlantic Coast. Excluded from this analysis are seven species found only in Arizona and/or the Pacific states. The latter set includes *Cisthene perrosea*, a California endemic which was recently documented in southern New Mexico (Metzler et al., 2010), and *Cisthene juanita* of Arizona, strays of which were reported in Arkansas (Lovely & Ettman 2013).

We searched the Barcode of Life Data System (BOLD), BugGuide (BG), Butterflies and Moths of North America (BAMONA; Lotts & Naberhaus 2017), Global Biodiversity Information Facility (GBIF), iNaturalist, The Lepidopterists' Society Seasonal Summary Database (LepSoc), Moth Photographers Group (MPG), Symbiota Collections of Arthropods Network (SCAN), and other online sites for records and images of *Cisthene* adults. Original descriptions, previous keys, sets of verified specimens (e.g., BOLD), and online images were examined to elucidate characters useful for identification in the absence of genitalic examination. None of these sources is error-free; thus barcoded specimens (BOLD) and those vetted by genitalic examination (Knowlton 1967) and recognized experts (Knudson & Bordelon 2010; E. Knudson, pers. comm.) were utilized as the primary sources to assess color patterns. A draft of the key and descriptions was compared against series of specimens in the U.S. National Museum, University of Texas Insect Collection, and Cornell University Insect Collection; photographs of representative examples were taken.

The key is structured as an "artificial key," i.e., species are grouped by phenotypic similarity rather than by taxonomic relationships. The species accounts are in taxonomic sequence (Lafontaine & Schmidt 2010).

Species descriptions include taxonomic sequence numbers (Pohl et al., 2016; Hodges et al., 1983), identification notes, range, and any habitat associations that have been recognized. Ranges of species were derived from a literature review and the previously-mentioned online databases after recognizable errors were eliminated (see References). Scientific names follow Lafontaine & Schmidt (2010); authors of specific names are omitted (see Lafontaine & Schmidt (2010) for authors). Common names are from Covell (1984), BAMONA (Lotts & Naberhaus 2017), and Sexton (2017b). Plant names are from the Integrated Taxonomic Information System (ITIS) (http://www.itis.gov); plant associations are from Correll & Johnson (1970).

Introduction to the Key

Examination of mounted, spread-winged specimens offers views of all macroscopic characters that may be useful for identification of *Cisthene* moths. For identification of photographic records, a combination of both lateral and dorsal images is most useful, along with an image including a mm rule adjacent to the live specimen. Because they are seldom visible in images of live specimens, characters associated with the hindwings are de-emphasized here with just two exceptions (Thin-banded and Barnes'). Such details can be crucial for definitive identification; see Knowlton (1967) for further info.

Most *Cisthene* share a vaguely similar forewing (FW) pattern with a dark gray or blackish FW offset by color areas that are various shades of white, yellow, orange, or red (Fig. 1). The FW is usually characterized by a post-median (PM) color band. In some species this is reduced to a costal spot and/or a spot along the inner margin (marginal spot). The PM band is broken into two or more pieces in some species, and sometimes lost altogether. Another key colored area is a basal streak that arises along or near the inner margin from the base of the wing. It may abut the margin or be separated from it by the gray ground color. In a few species the costa is colored as well. The center of the thorax (thoracic disk) is gray in most species but may be all yellow/orange. The color of the tegulae (tracts of scales flanking the thoracic disk), collar, and vertex (top of head) are important to note.

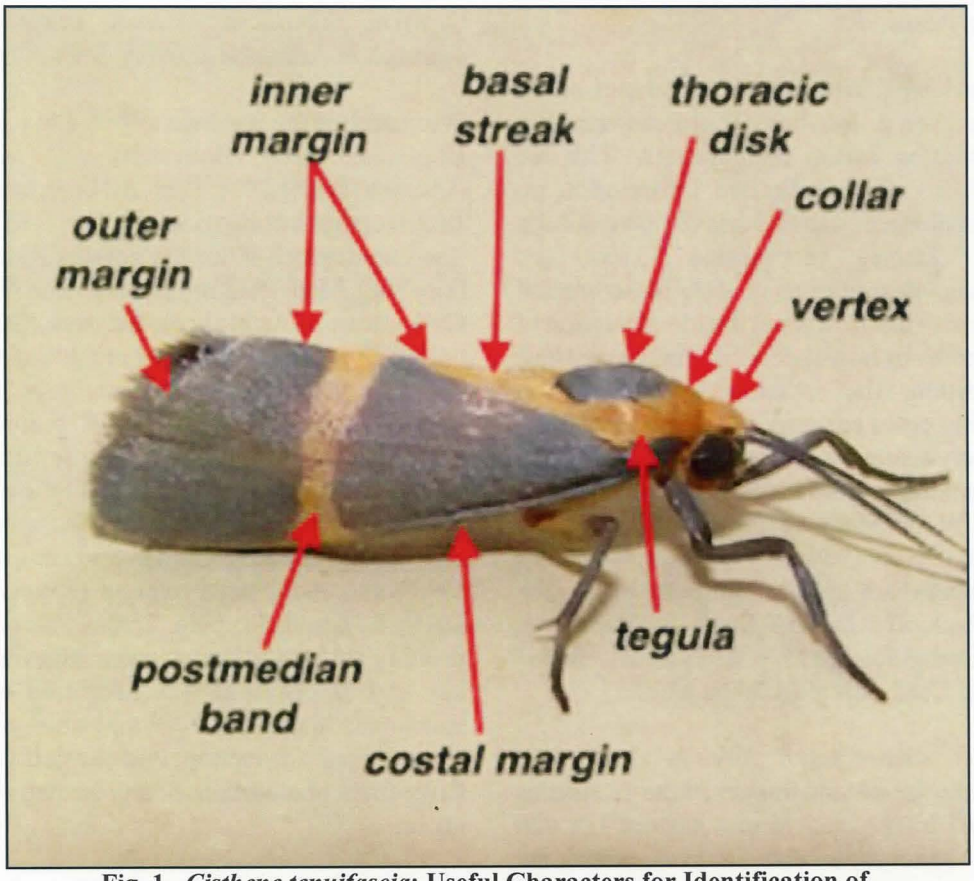


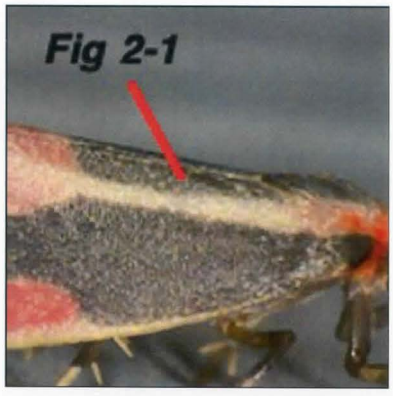
Fig. 1. *Cisthene tenuifascia*: Useful Characters for Identification of Cisthene moths.

Artificial Key to 13 Species of Cisthene

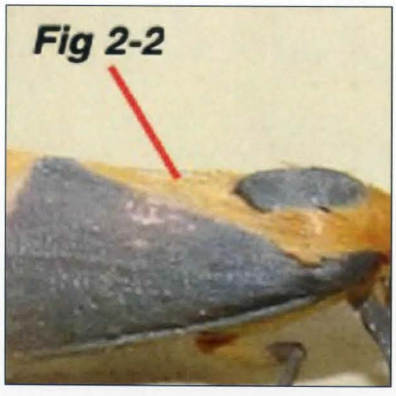
1a. FW gray with whitish markings; PM band consists of a quadrate spot on the costa and a rounded spot on the inner margin; white basal streak partly separated from marginal PM spot by a gray patch which is sometimes elongated basally along the inner margin; rare, south Texas. = *C. conjuncta*, **White-streaked Lichen Moth** (Fig. 1-1)

1b. FW gray with pale areas ranging from yellow to red-orange. (2)

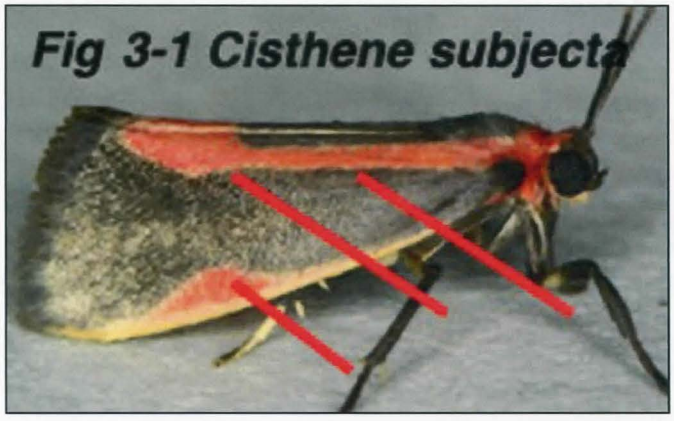
2a. Basal streak separated from inner margin of FW by gray (Fig. 2-1); narrow edge of yellow present along much of costal margin. (3)



2b. Basal streak contiguous with inner margin of FW (Fig. 2-2). (4)

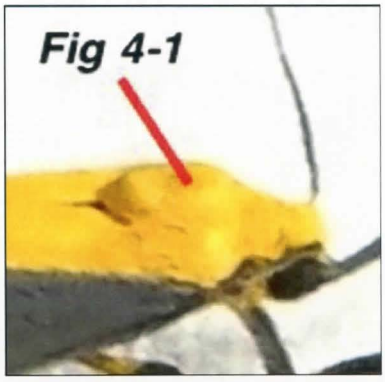


3a. Basal streak meets marginal PM spot at apex of spot; basal streak mainly reddish, contrasting little with thorax, collar, and marginal PM spot; costal PM spot spreading widely (flattened), usually 3X wide as tall; common, southeastern US. = *C. subjecta*, **Subject Lichen Moth** (Fig. 3-1)

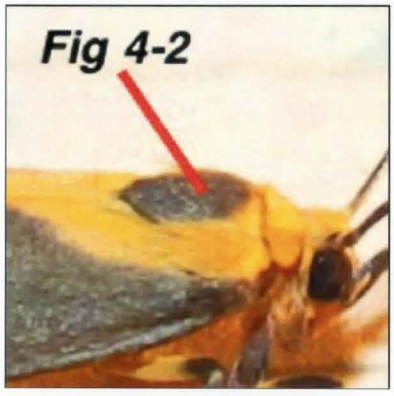


3b. Basal streak meets marginal PM spot below apex of spot; basal streak usually yellowish, contrasting with reddish on thorax, collar, and PM spots; costal PM spot mixed red and yellow, semicircular, connecting to costa at steep angle on proximal side; common, southeastern US. = *C. packardii*, **Packard's Lichen Moth** (Fig. 3-2)

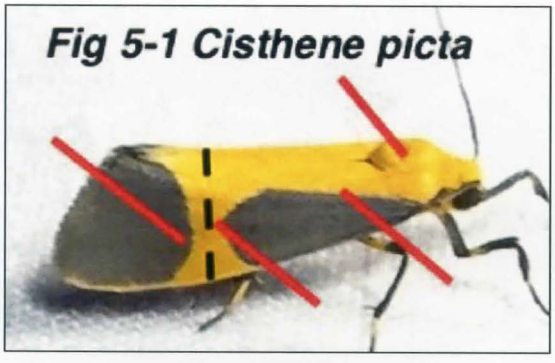
4a. Thorax, including central disk, entirely yellow or orange (Fig. 4-1) or with just a small streak of gray in rear center; basal orange streak broadly connected to PM band. (5)



4b. Thorax with gray central disk (Fig. 4-2). (6)



5a. Axis of PM band perpendicular to inner margin; distal edge of yellow/orange PM band clearly concave; basal streak with straight anterior margin; uncommon, southern Great Plains. = *C. picta*, **Pictured Lichen Moth** (Fig. 5-1)

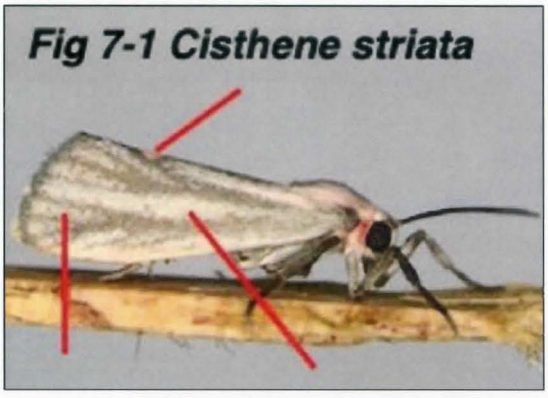


5b. Axis of PM band oblique, nearly parallel with outer FW margin; distal margin of PM band relatively straight (but flaring at costa); arid washes in the Southwest, east to west Texas. = *C. angelus*, **Angel Lichen Moth** (Fig. 5-2)

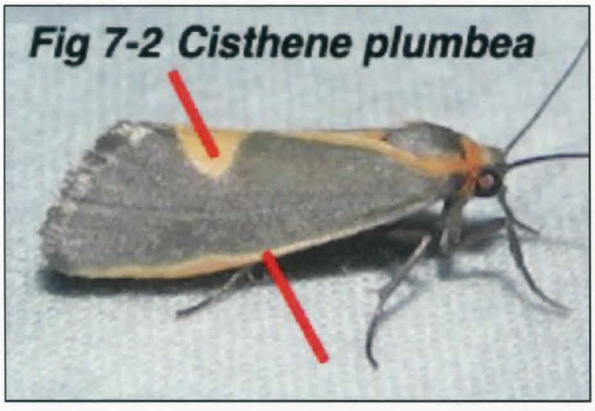
6a. PM spot usually absent on costa, but extensive yellow-orange streak extends along costa (1/2 to full length, variable); ground color medium gray or streaked whitish. (7)

6b. PM band complete OR at least costal PM spot obvious. (8)

7a. FW gray with blurry whitish longitudinal streaks in basal 2/3, and whitish between veins beyond the PM area; marginal PM spot small to large, usually pink-orange; common, Florida and southern Georgia. = *C. striata*, **Striated Lichen Moth** (Fig. 7- 1)



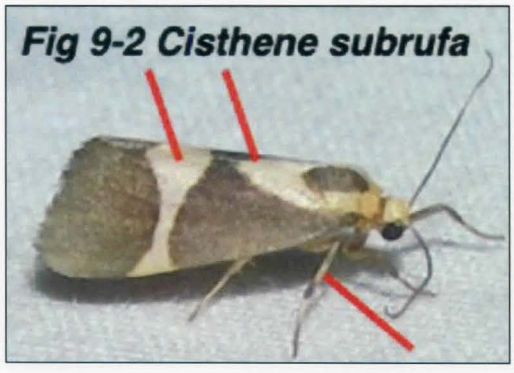
7b. FW gray without white streaking; variable amounts of yellow-orange; widespread, eastern US. = *C. plumbea*, **Lead-colored Lichen Moth** (Typical form shown in Fig. 7-2; variable amounts of yellow-orange, especially along costa as in form "*injecta*", see Fig. 7-3.)



8a. Top of head (vertex) gray but collar and tegulae usually orange (some *C. plumbea* may have gray head; see couplet 6); basal streak narrow; PM orange band typically very narrow or broken into 2 or 3 spots or virtually absent; in most individuals (83%, n = 24), the distal edge of the PM band is slightly convex; common, foothills of Rocky Mountains, east to Edwards Plateau of Texas. = *C. barnesii* **Barnes' Lichen Moth** (Figs. 8-1, 8-2)

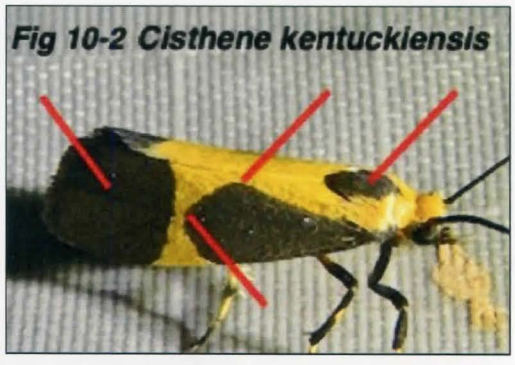
8b. Top of head as well as collar and tegulae orange or yellow; distal edge of PM band straight or concave (Figs. 4-2, etc.). (9)

9a. Light markings pale yellow; basal streak stopping well short of PM band, the pair of short basal streaks along with the pale tegulae creating an elliptical patch around the dark thoracic disk; PM band variable but usually flares much wider at inner margin than at costa, or PM band broken with large triangle on inner margin, smaller one on costa; ground color brownish gray, often darker next to PM band or triangles; middle tibia often mostly pale yellow or at least mid-1/3 yellow, hind legs usually all yellow; size small (FW 6 to 7 mm; wingspan 13 to 16 mm); fairly common, south Texas. = *C. subrufa*, **Tamaulipan Lichen Moth** (Figs. 9-1, 9-2)



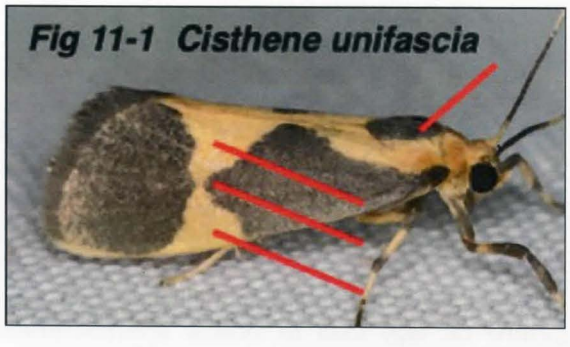
9b. Pale areas typically orange to red-orange (occasionally yellow); basal streak usually reaching PM band or close to it, sometimes broadly connected; PM band usually complete, ranging from wide to thin, sometimes broken; ground color typically slate gray to blackish. (10)

10a. FW ground color black, becoming grayer in worn individuals; basal streak wide and widely connected to wide PM band; PM band with rounded, concave proximal margin. Color areas orange to yellow; fairly common, southeastern US. = *C. kentuckiensis*, **Kentucky Lichen Moth** (Figs. 10-1, 10-2)



10b. FW ground color dark gray to slate gray; basal streak variable but not broadly connected to PM band if at all; proximal margin of PM band slightly concave OR angular. (11)

11a. PM band typically consisting of two broad-based triangles that barely connect in middle; PM triangle on inner margin often shaped like "shark's fin"; proximal edge of PM band thus deeply indented, angular, irregular; color areas usually pale orange but may be yellow or red-orange; legs commonly banded yellow and gray; common, southern Great Plains, east to at least Mississippi. = *C. unifascia*, **One-banded Lichen Moth** (Fig. 11-1)



11b. PM band narrower and of more uniform width with proximal edge straight to smoothly concave, or narrow and broken into spots; legs mostly gray, sometimes with yellow/orange on middle femur. (12)

12a. Pale areas usually dark red-orange, often with very narrow yellow perimeter; ground color dark gray to blackish, often slightly darker at margins of PM band; common, mountains of southern Arizona, New Mexico, and possibly west Texas. = *C. martini*, **Martin's Lichen Moth** (Fig. 12-1)

12b. Pale areas typically orange; ground color slate gray; orange basal streak and PM band variable but usually relatively narrow, PM band parallel sided or slightly concave on both edges, sometimes broken; common, Arizona and Colorado east to Atlantic Coast (?). Much regional variation (see below). = *C. tenuifascia*, **Thin-banded Lichen Moth** (Figs. 12-2, 12-3, 12-4)

Species Accounts

Tamaulipan Lichen Moth (*Cisthene subrufa*) (Poḥl #930176, Hodges #8059) (Figs. 9-1, 9-2)

Identification: Pale areas on the Tamaulipan Lichen Moth are pale creamy yellow rather than orange. A key mark is the basal streak that stops well short of the PM band. The paired basal streaks are rounded and thus in top view appear to form an elliptical pale area flanking the dark thoracic disk (like an avocado split in half). FW ground color is brownish gray, thus paler than fresh Thin-banded, but faded examples of the latter may appear browner. Leg color appears diagnostic but is not always visible in photos: Tamaulipan has much more yellow on legs than in similar species: middle tibia

are mostly yellow or at least with the middle 1/3 yellow, gray on either end; hind legs are almost all yellow (compare with Thin-banded). Size is important: Tamaulipan Lichen Moth has a wingspan of 13 to 16 mm, FW about 5.5 to 7 mm, while Thin-bandeds are larger with 16 to 20 mm wingspan and FW 8 to 10.5 mm (Knowlton 1967; Sexton, unpubl. data).

Range: Range is poorly known due to confusion with Thin-banded and One-banded Lichen Moths. It occurs in the Lower Rio Grande Valley of Texas and elsewhere in Texas uncommonly as far north as Walker, Bastrop, Travis, and Edwards counties (iNaturalist). It ranges south into Mexico at least as far as east San Luis Potosí (iNaturalist).

Habitat: Tamaulipan Lichen Moth appears to be associated with Subtropical Thorn Woodland in south Texas. Wagner et al. (2008) collected larvae from *Psychia* lichens on Texas Ebony (*Ebenopsis ebano*; Fabaceae).

One-banded Lichen Moth* (*Cisthene unifascia*) (Pohl #930177, Hodges #8060)(Fig. 11-1) (* "Banded Footman"; Kellogg 1906.)

Identification: In almost all instances, One-banded is easily distinguished by the PM band which is made up of two broad-based triangles that meet narrowly—or not at all—in middle. The basal streak is pinched near its juncture with PM band but usually connected to it. The proximal edge of the PM band is irregular and deeply indented, the notch appearing nearly rectangular. When the PM band is broken, the triangle on the inner margin often takes the shape of a "sharks's fin" with a convex proximal edge and straight or concave distal edge.

Grote & Robinson (1868) gave a vague description of their new species *C. unifascia* that could be applied to any of several species we now separate; they described the species from "Florida and Texas" and contrasted *unifascia* only with *C. subjecta*. The type specimen(s) could not be located by Knowlton (1967), thus we cannot discern what Grote & Robinson were originally examining. Since older literature (pre-1967) did not distinguish *unifascia* from other forms, other early references to *unifascia* are ambiguous (Harvey 1877, Beutenmuller 1898, Holland 1903, Dyar 1904, Kellogg 1906). Knowlton designated a new lectotype from a Texas specimen, and his description makes clear the application of the name *unifascia* to the form we have outlined in the present paper. Nonetheless, to this day, the similarity of the names *unifascia* and *tenuifascia* apparently still causes confusion among non-specialists.

Range: Because of name confusion and misidentifications, there remains substantial uncertainty about the actual range of One-banded Lichen Moth. Recent confirmed records (BOLD, BG, iNaturalist) suggest it is primarily found in the southern Great Plains including the southeastern 1/2 of Texas, eastern Oklahoma, and western Arkansas. A population is found in the Black Belt Prairie of northeast Mississippi (BOLD) and the US National Museum appears to have 6 specimens from Leon Co., FL. Other records in the southeastern states should be re-evaluated.

Kentucky Lichen Moth (*Cisthene kentuckiensis*) (Pohl #930178, Hodges #8061)(Figs. 10-1, 10-2)

Identification: Kentucky Lichen Moth is best identified by the black ground color, dark thoracic disk, and wide orange or yellow basal streak that is well connected to the wide PM band. Covell's (1984, p. 60) indication that the basal streak is "distinctly narrowed" near the PM band is contradicted by most images. The basal streak is always more widely connected to the PM band than it is in Thin-banded and the PM band itself is wider and more hour-glass shaped. The proximal margin of the PM band is broadly concave, in contrast to the irregular angular edge on One-banded. Kentucky might be confused with Pictured Lichen Moth but the latter has a solid orange thorax; no Kentucky Lichen Moths have been confirmed to have such coloration.

Range: Occurs over a broad area of the southeastern US from northeast Texas (Caddo L. area; iNaturalist) and eastern Oklahoma (LepSoc), east to central Florida, and north to southern Missouri (Fothergill et al. 2012), Indiana, Ohio, and New Jersey. It appears to be much less common over its wide range than Lead-colored or Packard's Lichen Moths. It may overlap with Pictured Lichen Moth in the area from eastern Oklahoma to Missouri and perhaps southern Indiana. Two records of *Cisthene* from southeastern Vermont in 2015-16 were initially identified as Kentucky Lichen Moths (BG, iNaturalist), but were re-identified as Pictured Lichen Moths based on solid orange thoraces.

Thin-banded Lichen Moth (*Cisthene tenuifascia*) (Pohl #930183, Hodges #8066)(Figs. 1, 12-2, 12-3, 12-4)

Identification. Thin-banded can be recognized by the combination of an orange vertex, dark thoracic disk, relatively narrow basal orange streak that nearly or actually reaches the PM band, and a narrow, sometimes irregular and sometimes broken orange PM band. The distal edge of the PM band is typically straight or slightly concave (c.f., Barnes' Lichen Moth). Leg color helps separate Thin-banded from Tamaulipan where ranges overlap in south Texas: although the middle femur commonly has much yellow on basal half, the mid-tibia is almost always all gray, lacking the yellow seen on mid-tibia of Tamaulipan. The hind legs of

Thin-banded are variable but usually have much gray, only occasionally all yellow as in Tamaulipan.

Thin-banded Lichen Moth was originally described by Harvey (1877) but later synonymized under other species (*C. subjecta* or *C. unifascia*) for the next 90 years until Knowlton once again elevated it (Smith 1891, Neumoegen & Dyar 1893, Snow 1905, Kellog 1906, Strand 1922, Knowlton 1967). Because of this name instability and its pattern variability, there has been extensive confusion on how to identify the species. This has been compounded by factors including: (a) overlooking previously described field marks, and (b) biased selection or erroneous identification of images (Covell 1984, BAMONA, MPG). Sources of confusion include the following:

— Barnes' Lichen Moth. This remains one of the most difficult challenges in *Cisthene* identification. The gray vertex of Barnes' has been frequently overlooked although Knowlton (1967) considered it an important determining character. A small percentage of male Thin-banded have gray on the anterior half of the vertex and orange on the posterior half. So far, we have seen only one male Thin-banded with an entirely gray vertex. The "legacy" version of the BOLD (version 3) website illustrates a single barcoded example of Thin-banded that seems to show gray on the vertex, the only one of 21 images on that page. None of the 25 public data images on BOLD (version 4) of Thin-banded show a gray vertex, so this condition is assumed to be rare in Thin-banded. Such individuals may not be separable in the field or in photos. Conversely, "many" specimens in the US National Museum have been curated as Barnes' Lichen Moth yet show a yellow/orange vertex (H. McGuinness, unpubl. data). Such specimens need confirmation by barcoding or genitalic examination. In spread specimens, male Thin-banded will have a distinct anal lobe on the HW and will show a pink lobe on the FW inner margin at the base of the PM band.

— Covell's assertion (1984, p. 60) that Thin-banded is "nearly identical" to Kentucky is not supported in most imagery. The blackish ground color of Kentucky in combination with the shape and widths of the basal streak and PM band are recognizably different in most individuals (see key). Covell's illustration (pl. 12, Fig. 13) of "Thin-banded" appears to be a Kentucky Lichen Moth.

— A problem can exist with online images from biased selection of the population(s) illustrated. Prior to September 2017, *all* the images on the MPG page for Thin-banded were examples from Arizona and New Mexico of the subspecies *schwarziorum* ("Schwarz's Lichen Moth") described by Dyar in 1899, with a very confusing subsequent taxonomic history. *Schwartiorum* differs from nominate Thin-banded in Texas by having a proportionately wider, complete PM band, yellower colors, and blackish gray ground color. See also: **One-banded** and **Martin's Lichen Moth.**

Range: Ranges from Arizona ("Schwarz's Lichen Moth") east across the southeastern US, and rarely up the Atlantic Coast to New Jersey (Knowlton 1967, Muller 1976, MPG); it is also found in Coahuila and Tamaulipas in northeastern Mexico. It's center of abundance seems to be in central Texas. The species is apparently not common east of Texas as there are presently no BG nor iNaturalist records of the species in that region. There are scattered reports from Utah, South Dakota, and perhaps elsewhere north of this general range (Knowlton 1967; LepSoc, MPG, BAMONA).

Lead-colored Lichen Moth (*Cisthene plumbea*) (Pohl #930184, Hodges #8067)(Fig. 7-2, 7- 3)

Identification: Recognized by the flat medium gray ground color, extensive yellow or orange streak along the costal margin, single PM spot on the inner FW margin, and lack of a corresponding PM spot on the costal margin. The amount of yellow/orange on the entire moth is extremely variable. Some populations, named "*injecta*" by Dyar (1904), have a completely orange head, thorax, and broad suffusion of orange over 1/3 to 1/2 of the FW; the fundamental pattern is still recognizable (Fig. 7-3).

Range: Probably the most widespread species in the genus across much of the eastern US. It is found from Texas, Oklahoma, and Kansas, through the Ohio River Valley, east to the Atlantic Coast, north to New York and Connecticut, and south to Florida. It has been recorded, probably as strays, in Wisconsin, Rhode Island, and Ontario, Canada (Knowlton 1967, Ward et al. 1974, Covell 1984).

Habitat: Lead-colored Lichen Moth seems to be associated with mixed mesophytic upland woodlands (oak-hickory; Landau & Prowell 1999b).

Striated Lichen Moth (*Cisthene striata*) (Pohl #930185, Hodges #8068)(Fig. 7-1)

Identification: Much like the Lead-colored Lichen Moth but with blurry whitish to pale gray dusting in three or four broad longitudinal streaks in basal 2/3 of FW and similar coloring between all veins in outer part of FW. Pink-orange PM spot on inner margin is variable in size and may rarely be absent. Phenotypically intermediate forms with Lead-colored occur in northern Florida and Georgia (Kons 2001, BOLD). Taxonomic trees from barcoding show specimens of Striated intermixed with Lead-colored in a single Barcode Index Number (BIN

BOLD:AAC4269), suggesting the two taxa are closely related genetically.

Range: Mostly confined to peninsular FL where it occurs from the northern counties south to the Keys (Heppner 2003). Intermediate forms with Lead-colored Lichen Moth are found in the northern part of this range (Kons 2001). Specimens identified as Striated from southern Georgia are in the mixed BIN with Lead-colored (BOLD).

Angel Lichen Moth (*Cisthene angelus*) (Pohl #930187, Hodges #8070)(Fig. 5-2)

Identification: Angel Lichen Moth is one of the two species that always has a solid orange thoracic disk, distinguishing it from all other species except Pictured Lichen Moth. The orange basal streak is nearly straight-edged and broadly connected to the PM band. The PM band is oblique, nearly paralleling the outer margin of the FW, whereas the same band on Pictured Lichen Moth is perpendicular to the inner and costal margins and has an obvious concave distal edge.

Range: Found at low to mid-elevations, widespread from southern Nevada and Arizona, north to southern Utah, and east through southern New Mexico to west Texas (Powell & Opler 2009). In west Texas, the species has been documented as far east as the Devil's River in Val Verde County where the ranges of *angelus* and *picta* appear to overlap narrowly (iNaturalist). The species has been documented in Baja California and Coahuila, Mexico, and probably occurs elsewhere in northern Mexico (Brown et al. 2004; iNaturalist).

Habitat: The species is associated with desert washes and narrow riparian strips in arid landscapes (Metcalfe et al. 2016; iNaturalist).

Subject Lichen Moth (*Cisthene subjecta*) (Pohl #930188, Hodges #8071)(Fig. 3-1)

Identification: Subject Lichen Moth is similar to the more common Packard's Lichen Moth. Both have the basal streak separated from the inner FW margin by gray. Most individuals of Subject are recognized by the basal streak that connects to the "top" of the marginal PM spot; that is, the spot usually does not bulge closer to the costal margin. The basal streak is more often reddish color in Subject, nearly concolorous with the thorax and PM spot, compared to the yellowish color of the basal streak on typical Packard's. Finally, the reddish costal PM spot is spread out widely (flared out), often 3X as wide as tall, compared to the more rounded spot on Packard's. Subject Lichen Moth is appreciably smaller than Packard's; FW of male Subject is 12-16 mm compared to 14-19 mm of male Packard's (Knowlton 1967). However most of these characters are variable; a combination should be used for ID. Some individuals may be difficult to separate.

Range: Occurs from northeast Texas (rare) east to the Atlantic Coast, including all of peninsular Florida. It seems to be less common than Packard's everywhere except in Florida. It is well-documented only in the southern tier of states, north to North Carolina (BG, BOLD, iNaturalist); it has been reported rarely from Tennnessee, Kentucky, and Indiana (GBIF, LepSoc, MPG). Records in Oklahoma, Kansas, New York, New Jersey, Delaware, and elsewhere out of the Deep South may be misidentified Packard's Lichen Moth (Knowlton 1967; SCAN).

Packard's Lichen Moth (*Cisthene packardii*) (Pohl #930189, Hodges #8072)(Fig. 3-2)

Identification: As in the Subject Lichen Moth, Packard's has the basal color streak separated from the inner FW margin by gray. In this species, the basal streak is typically yellowish, never red, and the marginal PM spot extends "higher" (forward on the wing, thus closer to the costal margin) than its confluence with the basal streak. The yellow basal streak often contrasts with reddish color on the collar and parts of the tegulae. The marginal PM spot is often bicolored, yellow on the anterior end and red near the inner margin; the latter red area is often rectangular. The costal PM spot is typically a well-rounded half-circle, usually with a steep proximal edge at the costa, not flattened or flared out as on Subject Lichen Moth. This costal PM spot is often reddish in the middle and yellow around the edges but it can be all yellow. Some Subject Lichen Moths can have color areas nearly as yellow (perhaps faded) as most Packard's but the opposite is not the case; no Packard's is ever as red as Subjects. Both species are somewhat variable and a combination of characters is needed to separate them. As mentioned earlier, the illustration of Packard's in Beadle & Leckie (2012, p. 293) is a Lead-colored Lichen Moth.

Range: This is one of the two most common lichen moths across much of the southern and eastern US. It ranges from east Texas, east Oklahoma, Kansas, and Missouri, east to Florida and northward as far as southern New England. Because of confusion with Subject Lichen Moth, many older literature and sight records are unreliable (e.g., Holland 1903).

Habitat: Packard's Lichen Moth is found in forested areas and edges, associated primarily with the

mesophytic hardwood components of such forests (Landau & Prowell 1999a,b; Stanton et al. 2003).

White-streaked Lichen Moth (*Cisthene conjuncta*) (Pohl #930190, Hodges #8073)(Fig. 1- 1)

Identification: The White-streaked Lichen Moth is closely related to the Subject-Packard's species group (Knowlton 1967); it was confused with those species when first encountered (e.g., Snow 1905). The whitish color of the basal streak and PM spots is characteristic, although worn examples of Packard's Lichen Moth can look very pale. Typically the area between the white basal streak and the inner margin on White-streaked is filled with white, leaving only a small spot of gray at the base of the PM spot. The male genitalia are very similar to Packard's; the female of this species is apparently unknown (Knowlton 1967).

Range: This species is something of a mystery. The known range is complicated due to confusion with Packard's Lichen Moth. It was described originally from a single male collected in Cameron County in the Lower Rio Grande Valley of Texas (Barnes and McDunnough 1913). A barcoded specimen of White-streaked was collected at Laguna Atascosa NWR, also in Cameron County, in 2003 (BOLD). Additional specimens in the US National Museum are from Kerr, Jackson, and San Patricio counties; a specimen in the Belfrage collection there may be from Bosque County but the exact collecting locales for some of Belfrage's specimens are unknown (Knowlton 1967). Knowlton (1967) remarked that the Kerr County and Bosque County specimens looked like White-streaked but had genitalia "definitely" like Packard's. The BAMONA database includes "legacy" records (Northern Prairie Wildlife Research Center data) from several Texas counties and one record in Louisiana; we have no basis for evaluating those records.

Habitat: In the Lower Rio Grande Valley of Texas, the species is found in Tamaulipan Thorn Woodland. From a biogeographic standpoint, the primary habitats of White-streaked and Packard's are distinct and well separated by some 200+ miles.

Barnes' Lichen Moth (*Cisthene barnesii*) (Pohl #930191, Hodges #8074)(Figs. 8-1, 8-2)

Identification: Barnes' Lichen Moth can be very similar to Thin-banded but is normally recognized by the gray vertex. Additionally, a majority (83%) of Barnes' have a convex distal margin to the narrow PM band (or its outline)(Fig. 8-2), giving the whole band a slightly convex shape; the distal margin of the PM band on Thin-banded is typically straight or slightly concave. The color of the middle legs may also be useful: The legs of all Barnes' are reportedly gray and should show no more than a trace of yellow at the base of the mid-femur, if any. Thin-banded should show at least some yellow-orange on the middle femur, often half or more but at least a smudge at the base of the middle femur. On a spread specimen, the presence of an anal lobe on the HW will distinguish Thin-banded from Barnes' males. Range is useful: Barnes' Lichen Moth is unexpected any substantial distance east of the Rocky Mountain foothills or the Edwards Plateau of Texas.

Range: Barnes' Lichen Moth is widespread in the southern and central Rocky Mountain states from Arizona and New Mexico north through most of Utah and Colorado, and less commonly to Idaho, Montana, and Wyoming (Knowlton 1967; BG, MPG). There are also scattered records in western North Dakota, South Dakota, and Nebraska (BAMONA). It ranges only as far east as the Edwards Plateau in central Texas.

Habitat: Although Knowlton (1967) termed this a "Rocky Mountain species", that is misleading; it is generally associated with foothill areas and pinyon-juniper or juniper-oak woodlands.

Pictured Lichen Moth (*Cisthene picta*) (Pohl #930192, Hodges #8075)(Fig. 5-1)

Identification: Pictured Lichen Moth is one of the two species that have a completely orange thorax, a character shared only with the Angel Lichen Moth. The basal streak is wide, straight edged, and broadly connected to a wide PM band. The PM band is perpendicular to the inner margin and is usually smoothly concave on both sides. The species might be confused with Kentucky or One-banded Lichen Moths but both of those species have a dark thoracic disk. In comparison to One-banded, the basal streak is rarely pinched before the PM band, the proximal margin of the band is generally smoothly concave and it is never broken into two triangles.

Range: Apparently has a limited distribution mainly in the southern Great Plains. It has been documented from Texas, Oklahoma, Colorado, and southwest Missouri. There are a few records in southern Indiana that may represent the northeastern limit of the range or may be extralimital. Two recent reports of strays from Vermont are remarkable (2015 and 2016, both in July; BG, iNaturalist). It seems not to be common anywhere.

Habitat: The habitat associations of Pictured Lichen Moth are poorly known. At least some of the specimens were collected in riparian woodland corridors within semiarid grasslands or shrublands.

Martin's Lichen Moth (*Cisthene martini*) (Pohl #930195, Hodges #8078)(Fig. 12-1)

Identification: Martin's Lichen Moth is very similar to Thin-banded except that all the colors are darkened and over-saturated. Most noticeably, the basal streak and PM band are usually dark red-orange. In several online images, the PM band shows a thin hint of yellow around its perimeter and the ground color is slightly darker around the edges of the band, both of which tend to sharpen the contrast of the PM band with the FW ground color.

In Arizona material, Knowlton (1967) could not visually distinguish Martin's Lichen Moth from the Coronado Lichen Moth (*C. coronado*). Thus far, all barcoded specimens of Martin's have been assigned the same Barcode Index Number as all Coronado Lichen Moths (BIN BOLD:AAA2038), suggesting either close genetic similarity or specimen misidentifications.

Range: Primarily known from the foothills and lower montane areas of southern and central Arizona. There is a single record from adjacent southwestern New Mexico (LepSoc). The species is hypothetical in west Texas. Series of *Cisthene* moths were collected in August 2015 and July 2016 high in the Davis Mountains that may include Martin's Lichen Moth (iNaturalist, B. Neuelle Jr., pers. comm.). The Texas Lepidoptera Survey has no records of *martini* in Texas (Knudson & Bordelon 2010; Ed Knudson, pers. comm.).

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Note: A list of supplemental distributional references and checklists that aided the range descriptions in the present work is available from the first author.

(Chuck Sexton, 6007 Salton Dr., Austin, TX, 78759;
E-mail: gcwarbler@austin.rr.com;
Hugh McGuinness, Maret School, Washington D.C.;
E-mail: hdmcguinness@gmail.com)

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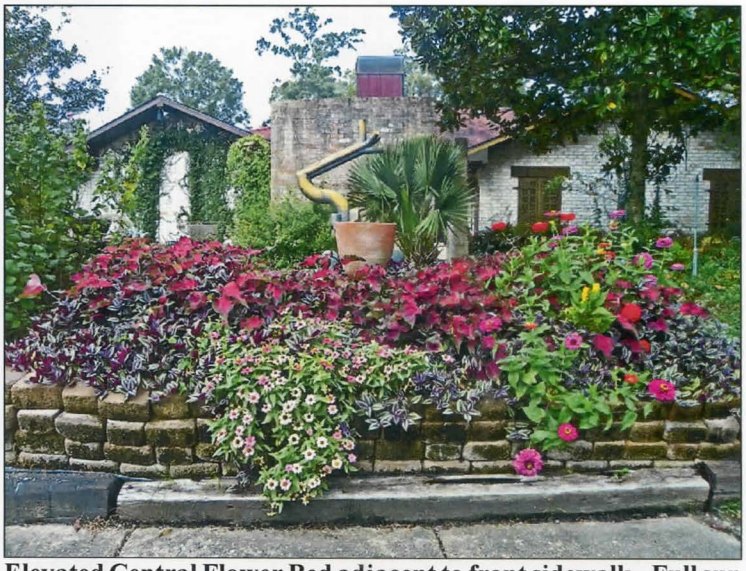
MY GARDENS' FALL FAVORS

BY

GARY NOEL ROSS

The weather during the early summer of 2017 was difficult for gardeners in south Louisiana: frequent and heavy rains and high temperatures encouraged the rampant growth of weeds. After I removed the spent spring annuals (see Ross 2017a,b) from my four major front flower gardens, I was reluctant to undertake a massive planting for summer and fall. Instead, I scaled back. Rather than fill all beds with typical summer/fall annuals, I settled on reorganizing only two beds, leaving the remaining fallow to be sprayed periodically with herbicide to control the emergence of weeds. Once Halloween had passed, my plan was to sow these fallow beds with poppy seeds for a massive spring bloom.



Elevated Central Flower Bed adjacent to front sidewalk. Full sun annuals: caladiums (*Caladium bicolor* var "Red Ruffle"), dwarf zinnia (*Zinnia marylandica*, var "Zahara"), tall zinnia (*Zinnia elegans*), wandering Jew (*Tradescantia zebrina*), and dwarf yellow celosia (*Celosia*).

I included the following plants within the two beds that I cultivated for my personal aesthetics and pollinators during the summer and fall of 2017:

Bromeliad (*Portea petropolitana* var. *extensa*)
Caladium/elephant ear (*Caladium bicolor*), cultivar "Red Ruffle"
Cassia/senna (*Senna corymbosa*)
Celosia/cock's comb/woolflower (*Celosia*), red/yellow dwarf cultivars
Cleome/spider flower (*Cleome hassieriana*), cultivar "Señorita Rosalita"
Coleus (*Piectranthus scutellarioides*), cultivars "Black Beauty" and "Big Chief"
Coneflower, purple (*Echinacea purpurea*)
Crossandra/firecracker flower (*Crossandra infundibuliformis*)
Globe amaranth/button bush (*Gomphrena globosa*), purple/pink hues
Goldenrod (*Solidago*)
Ironweed, New York (*Vernonia noveboracensis*)
Lantana (*Lantana camara*), cultivar "Miss Huff"
Mexican flamevine (*Senecio confusus*)
Milkweed, Mexican (*Asclepias curassavica*)
Pagoda flower (*Clerodendrum paniculatum*)
Passionflower, vine (*Passiflora caerulea*)
Pentas/star flower (*Pentas lanceolata*), red cultivar
Petunia (*Petunia x atkinsiana*), cultivar "Tidal Wave Silver"
Porterweed (*Stachytarpheta jamaicensis*)
Salvia/sage (*Salvia coccinea*), cultivar "Lady in Red"
Turk's cap (*Malvaviscus arboreus*)
Wandering Jew, tricolor/inch plant/spiderwort (*Tradescantia zebrina*)
Zinnia (*Zinnia elegans*), tall cultivars
Zinnia (*Zinnia marylandica*), dwarf cultivar "Zahara"

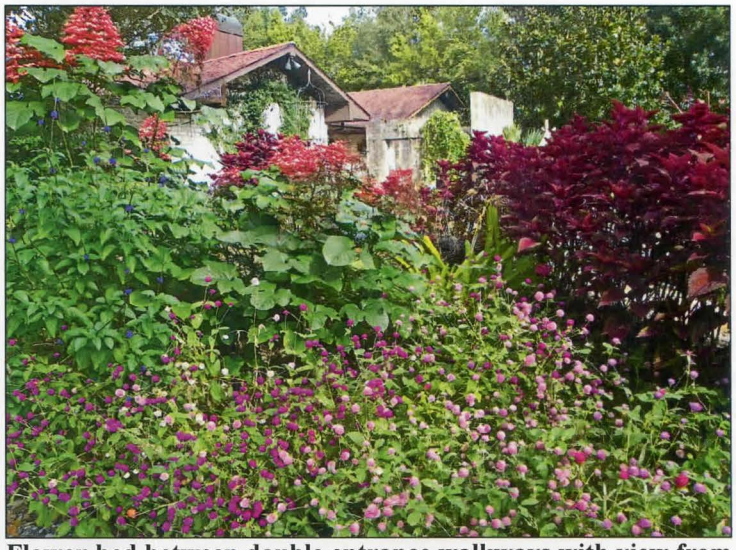
In addition to the above, I cultivated the following in large ceramic pots placed adjacent to brick walls near the flower beds:

Blue daze (*Evolvulus geomeratus*)
Moonvine, flower (*Ipomoea alba*)
Periwinkle/Vinca (*Catharanthus roseus*), cultivar "Cora Cascade Magenta"
SunPatiens (*Impatiens*), hybrid/cultivar by "Sakata"
White-veined Dutchman's pipe (*Aristolochia fimbriata*)

All in all, the plants that proved the most attractive to butterflies were the zinnias and lantana. The most common species of butterflies (listed in descending order of abundance) that I observed virtually every day from late September through October were:

Gulf Fritillary (*Agraulis vanillae*)
Long-tailed Skipper (*Urbanus proteus*)
Cloudless Sulphur (*Phoebis sennae*)
Giant Swallowtail (*Papilio cresphontes*)
Pipe-vine Swallowtail (*Battus philenor*)
Painted Lady (*Vanessa carpdui*)
Eastern Tiger Swallowtail (*Papilio glaucus*)
Eastern Black Swallowtail (*Papilio polyxenes*)
Whirlabout (*Polites vibex*)

The following photographs were taken during early October 2017. Enjoy!



Flower bed between double entrance walkways with view from driveway. Full sun in morning partial shade in afternoon. Plants visible: Pagoda flower (*Clerodendrum paniculatum*)—tall/upper left/center, coleus (*Piectranthus scutellarioides* var. "Black Beauty"—right/center, blue porterweed (*Stachytarpheta jamaicensis*)—left/center, bromeliad (*Portea petropolitana* var. *extensa*)—near middle/center, and globe amaranth (*Gomphrena globosa*)—bottom.

ACKNOWLEDGEMENTS

My thanks to **Frank Zachariah's Wild Flowers** for providing most of my plants, and to **Boudreaux's Lawn & Gardening** for assistance with maintenance of my flower beds.

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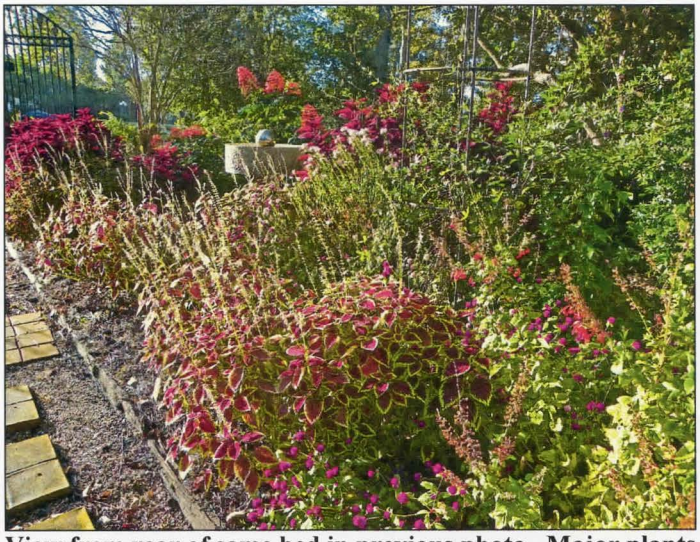
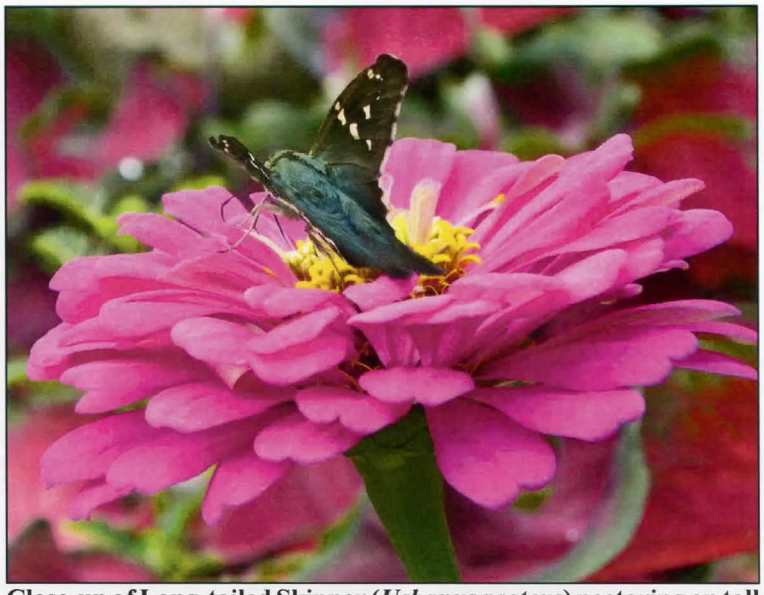


View from rear of same bed in previous photo. Major plants visible: two cultivars of coleus "Black Beauty" (rear), "Big Chief" (front) Salvia (*Salvia coccinea* var. "Lady in Red")—center right, cleome (*Cleome hassieriana* var. "Señorita Rosalita"—upper center), Pagoda flower (tall/top), and globe amaranth (bottom).

Close-up of pagoda flower with two floral spikes of porterweed in extreme right. Tubular flowers of *Clerodendrum* are ideal sources of nectar for swallowtail butterflies. A related *Clerodendrum* in New Guinea is a favorite source of nectar for birdwing butterflies (*Ornithoptera*), a specialized group of swallowtails.

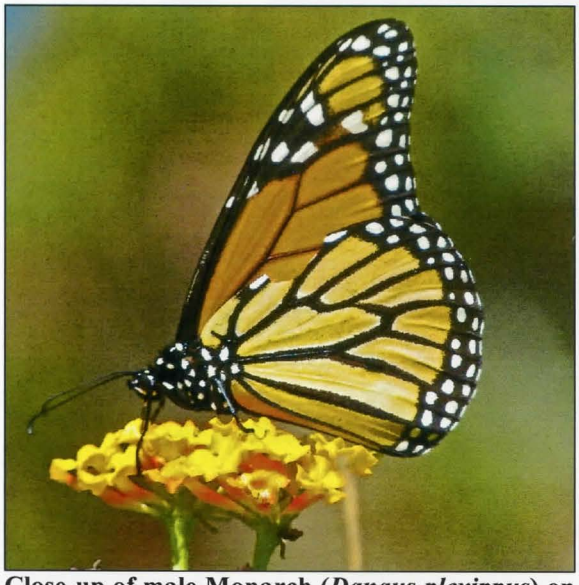
Close-up of moonvine (*Ipomoea alba*) in large ceramic pot with trellis and brick wall behind. Large flowers open at sunset, close after sunrise. Sphinx moths and bats are attracted to the very fragrant flowers (lovely for humans, too).



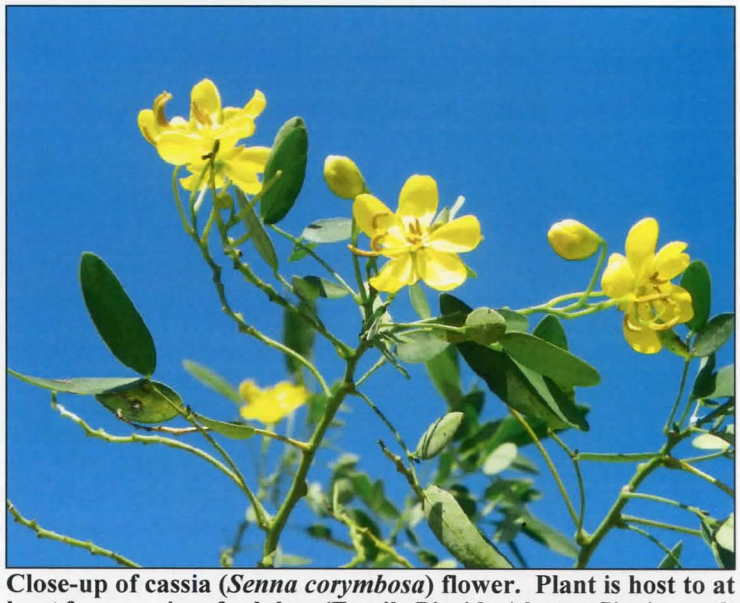
Close-up of Long-tailed Skipper (*Urbanus proteus*) nectaring on tall zinnia. Zinnias are major butterfly attractors anywhere they grow.

Close-up of male Gulf Fritillary (*Agraulis vanillae*) nectaring on tall zinnia.

Close-up of larval Gulf Fritillary on passionflower (*Passiflora cerulea*), its host.

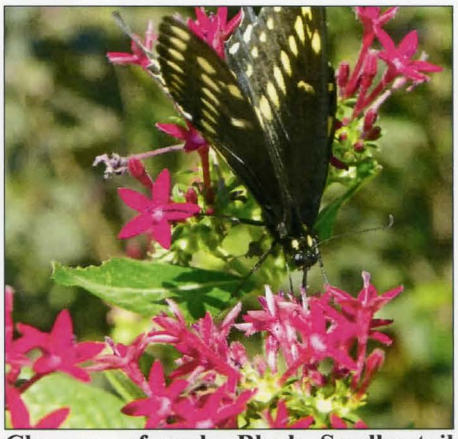


Close-up of male Monarch (*Danaus plexippus*) on lantana (*Lantana camara* var. "Miss Huff"). Older flowers of this tall cultivar sport more hues—especially lavender.



Close-up of cassia (*Senna corymbosa*) flower. Plant is host to at least four species of sulphur (Family Pieridae) butterflies in south Louisiana.

Close-up of larval Cloudless Sulphur (*Phoebis sennae*) on branch of cassia, its food plant.



Close-up of male Black Swallowtail (*Papilio polyxenes*) nectaring on red pentas (*Pentas lanceolata*).

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

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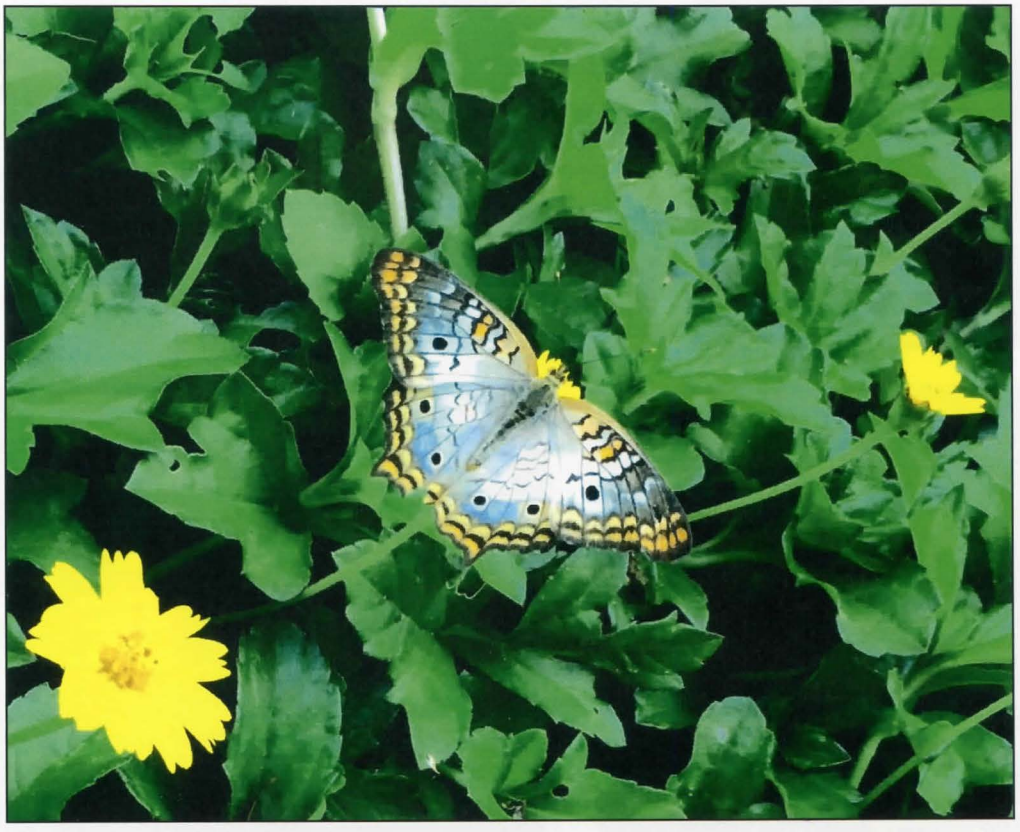

Tom Neal sends in the above photo and report: The White Peacock (*Anartia jatrophae*) is nearly ubiquitous at any roadside damp spot in south and central Florida, especially coastal. Although I have seen single specimens in Gainesville on occasion in the past, this year it seems to be everywhere. After seeing a couple fly through my yard I just discovered a colony a block from my house. They appear to be happily inhabiting a wetland of Fog fruit, *Phyla nodiflora*, and *Wedelia trilobata* created by a leak in the sprinkler system of a vacant house in the neighborhood. Glad it's not MY water bill!

VISITING THE NATURAL HISTORY MUSEUM LEPIDOPTERA COLLECTION

CROMWELL ROAD, LONDON, ENGLAND

BY

F. MATTHEW BLAINE

On May 15th 2017, Dona and I fulfilled one of my lifelong desires, that being to visit the greatest natural history museum in the world, The Natural History Museum in London referred to hereafter as NHM.

The NHM entomology collection is composed of many private collections and specimens from historically significant people such as Charles Darwin, Alfred Russel Wallace, Lionel Walter Rothschild, Sir Hans Sloane, Joseph Banks, and other iconic collectors {A, F, H}. It was started when L.W. Rothschild left his massive collection of Lepidoptera to the NHM. He "bequeathed the museum and its collections to the Trustees of the British Museum in his will, and they were then passed to the Natural History Museum – or the British Museum (Natural History) as it was known at the time"{C}. In addition to the historical collections and specimens, new specimens are continually being added by active collecting of staff members and incoming donations. The museum offers special exhibitions for the public and research opportunities for researcher from around the world.

We were very fortunate to have met Geoff Martin, Collections Manager (Lepidoptera), NHM, on our trip to Colorado back in 2016 for The Lepidopterists Society's Annual Meeting. I had actually contacted Geoff the year before and attempted to set up a visit to the museum but that did not work out due to distance and time restraints. Geoff invited us to visit the museum for a tour of the Lepidoptera collection the next time that we were in London. A year later we were able to stay in London for a day and take him up on the invitation. We would fly into Heathrow Airport, stay at a motel near there and travel from the airport to the museum for the tour.

Geoff advised us on the transportation possibilities from Heathrow Airport to NHM. We took his recommendation to use the "underground" as it was fast, direct, and reasonably priced instead of a taxi which was much more expensive and would have taken a great deal of time in the London traffic. When we arrived in London, we left our bags in our motel room and headed from Heathrow Airport via the underground from Terminal 4 the Piccadilly line South Kensington (Fig. 1). It only took about 25 minutes to get to our station where we departed the rail car and found the well-marked way through underground pedestrian walkways toward the museum (Fig. 2). In the underground walk we were accompanied by several long lines of elementary school children with their teachers and chaperones. They were also heading to the museum. The children wore safety glow orange, green, or yellow vests like the ones that construction workers in the USA wear. This was a brilliant idea! It made each class easy to locate and keep in the proper groups. The kids were very well behaved and eager to see the wonders in the museum. When we climbed the exit stairs we were at the museum (Fig. 3). The school kids were queuing up for entry to "Sensational Butterflies" exhibit on the side of the museum. I knew that we were in the "right" place (Fig. 4)! We were to enter at the staff and visitor door on Exhibition Road which is on the opposite side of the buildings. When one walks down Exhibition Road you have HHM on one side and The Victoria and Albert Museum on the other (Figs. 5, 6). When we walked down Exhibition Road we were looking for the Staff & Visitor entrance but we only saw one with a very long line (Fig. 7). When we got there we found that there was a door to the right of the line which was our entrance so we didn't have to go to the end of the line.

Fig. 1. Matt & Dona on the Underground headed for NHM. At this point we had not slept in 36 hours!

Upon entering we found the desk for visitors where we filled out a form and received our visitor passes. While we did that they called Geoff who came down to greet us (Fig. 8). As he guided us through the museum toward the Entomology department, he pointed out some of the old cabinets that were in the process of being replaced (Fig. 9). Along the way I managed to take a photograph of the old building (Fig. 10) which is undergoing some restoration. Here in my close-up of the tower one can

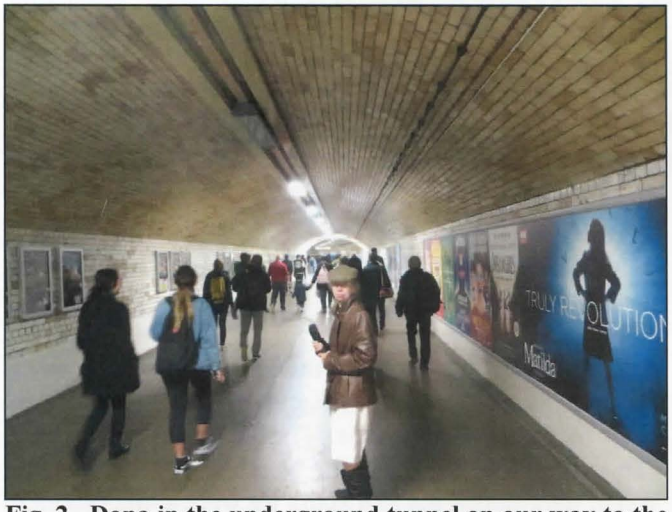

Fig. 2. Dona in the underground tunnel on our way to the museum.

Fig. 3. Out of the tunnel where we emerged on the street corner.

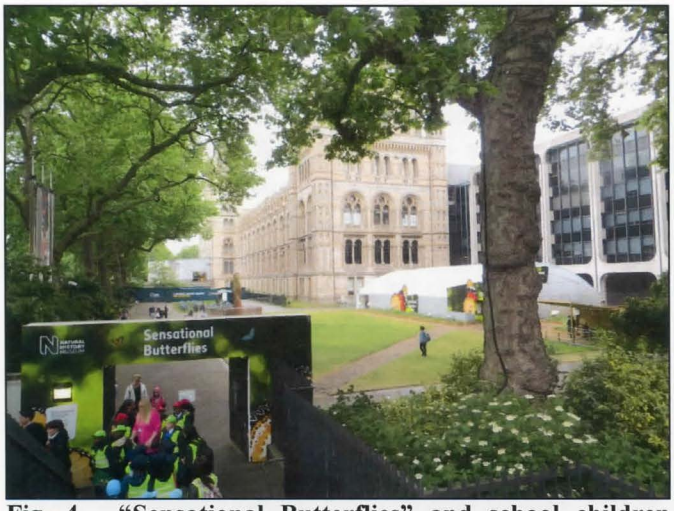

Fig. 4. "Sensational Butterflies" and school children waiting to get in.

Fig. 5. Exhibition Road with NHM on our left and Victoria and Albert Museum on our right.

Fig. 6. Victoria and Albert Museum across the street.

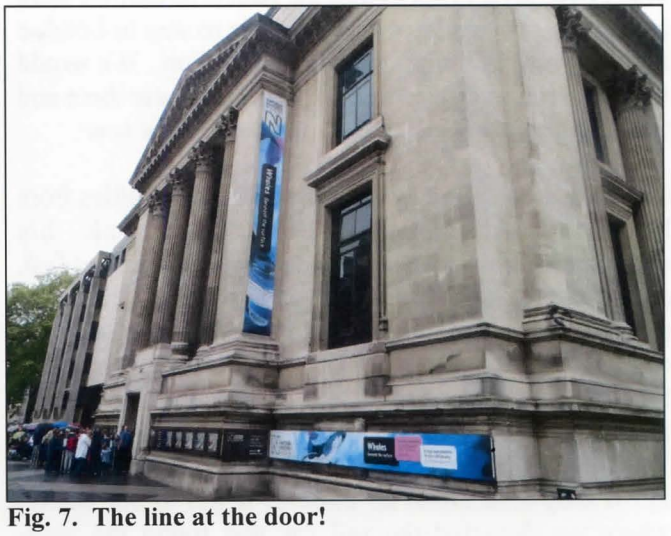

Fig. 7. The line at the door!

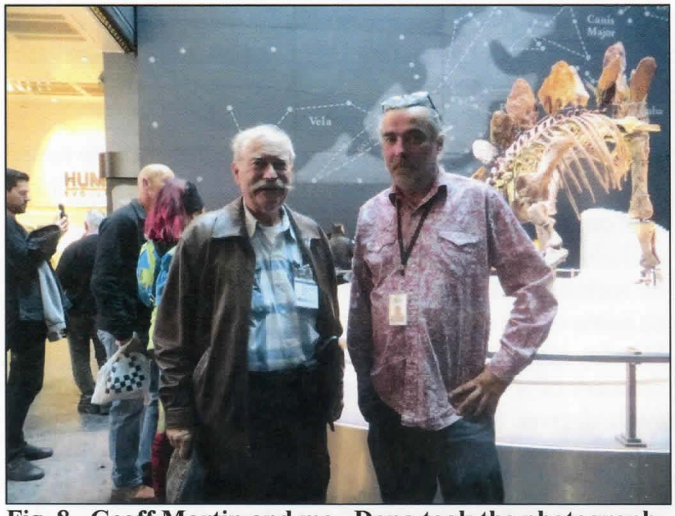

Fig. 8. Geoff Martin and me. Dona took the photograph.

Fig. 9. Cabinets being replaced and reused.

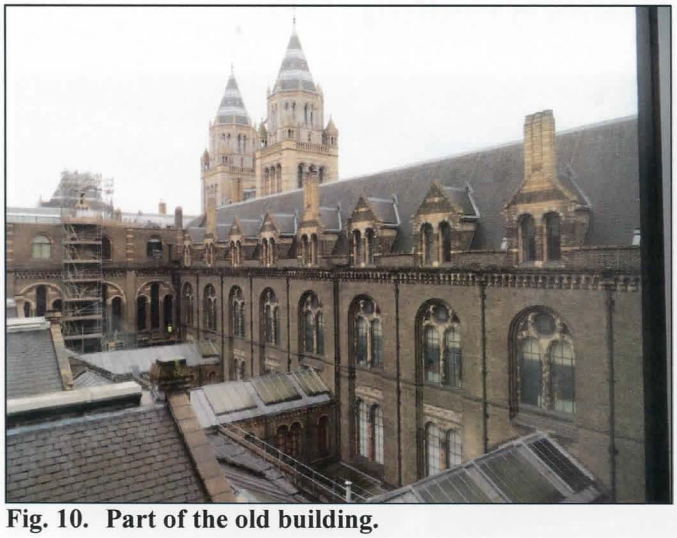

Fig. 10. Part of the old building.

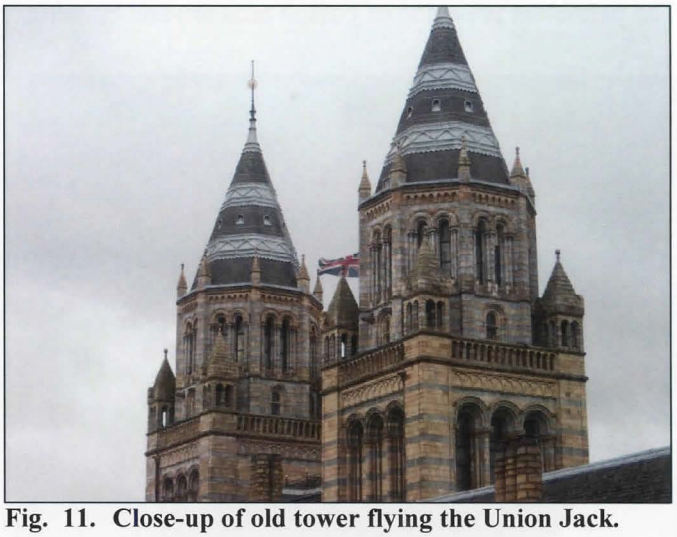

Fig. 11. Close-up of old tower flying the Union Jack.

Fig. 12. Dona and Geoff in his office area where we left our coats.

Fig. 13. New compactor shelving in the Cocoon.

see the Union Jack flying high over the NHM (Fig. 11). We made it to Geoff's office area where we had to leave our coats before entering the collection (Fig. 12). This practice of leaving coats, bags, etc. before entering the collection is in place to eliminate anyone from inadvertently bringing in harmful insects which might damage the collection.

The new egg shaped building is known as the 'Cocoon'. It houses all dried and papered insects with the exception of the Coleoptera. It was completed in 2009 {D}. All specimens are frozen before going into the Cocoon. The freezing process being used by most modern museums now kills deleterious pests that might injure or eat specimens. Over the hundreds of years that the NHM collection spans, many methods were used to keep the specimens from being destroyed by pests. One early technology used by some collectors was to coat the inside of each insect drawer with highly toxic poison. The persistent presence of poison puts anyone opening and handling these drawers at risk. This poisoning practice has long been abandoned now, but one still needs to be careful when examining historic collections in original drawers {D}.

We finally entered the new Cocoon facility where rows of new compactor shelving have been installed (Fig. 13). The compactor shelving units were designed to use new and old entomological drawers. Here things that need to be sorted are stored (Fig. 14). Geoff proceeded to show us some of the showier specimens like the Death's Head Hawkmoths *Acherontia atropos* (Fig. 15). More drawers of *A. atropos*, note color bars on front right of each drawer (Fig. 16). Each color on the label bar represents a zoogeographic region on the earth. When specimens in a drawer are marked with an x on the tag it means that specimens from that region are in the drawer. Note that New Zealand is brown and not pink (Figs. 17, 18). Geoff left me for a while to explore the Noctuidae by myself (Figs. 19-22).

Fig. 14. Cabinets hold both old and new entomological drawers.

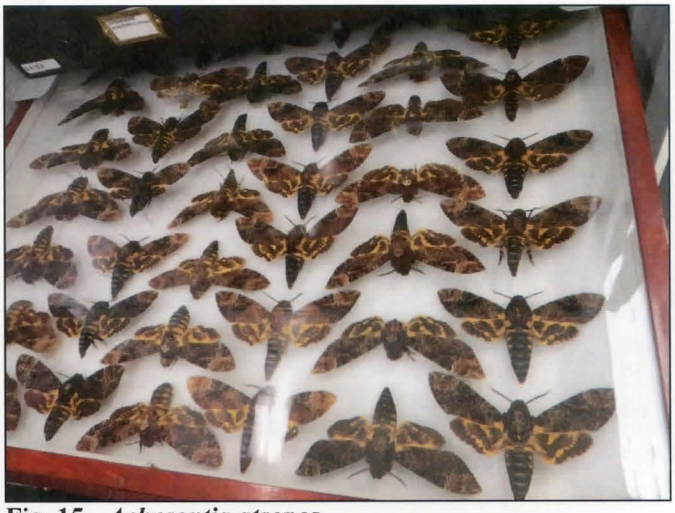

Fig. 15. *Acherontia atropos*.

Fig. 16. *Acherontia atropos* drawer with color bar on right front.

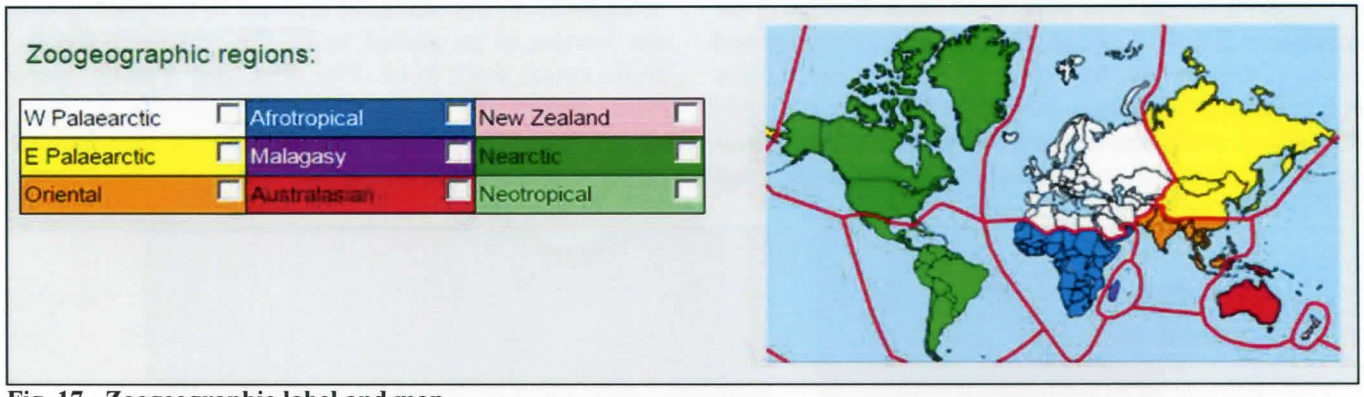

Fig. 17. Zoogeographic label and map.

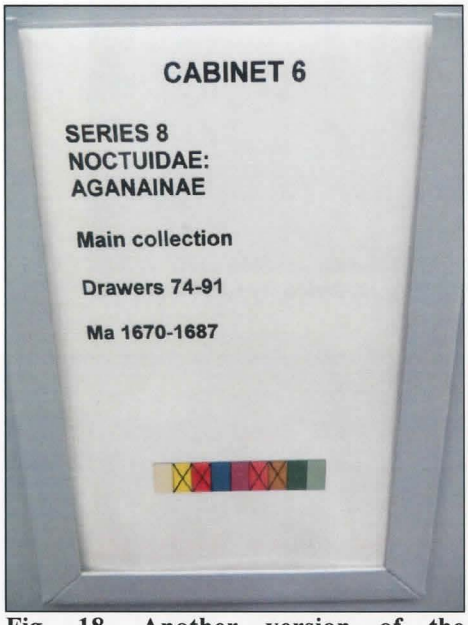

Fig. 18. Another version of the Zoogeographic label in use on a cabinet.

Fig. 19. Exploring the Noctuieae. Dona photographer.

Fig. 20. More Noctuieae.

Fig. 21. More Noctuieae.

Another objective that I had while I was visiting the NHM was to see and photograph the Syntypes of the butterfly that Yasushi Nawa discovered *Luehdorfia japonica.* He called it Gifu Butterfly (Fig. 23){F}. Geoff was kind enough to have the drawer ready for me to photograph when we arrived. If you look at the photograph closely you will notice that the drawer has a glass bottom. Each butterfly is pinned on thin strips of material that are attached to the back and the front inside edges of the drawer. The idea is that one can keep the glass top on the drawer and see both sides of every specimen by simply turning the drawer over. Geoff

explained to me that this idea could cause damage to the specimens if a piece of one detached and moved around inside of the drawer. As a result, all of this type of glass bottom drawer is going to be replaced or more correctly refitted. A craftsman has been contracted to remove all of the glass bottoms and replace them with a traditional solid bottom. The stacks of drawers in this photograph are waiting to be picked up by the craftsman for the replacement work to be done (Fig. 24). Finally, there were some of the beautiful old cabinets to store microscope slides which are part of the Lepidoptera collection still being used (Fig. 25).

Fig. 22. More Noctuieae.

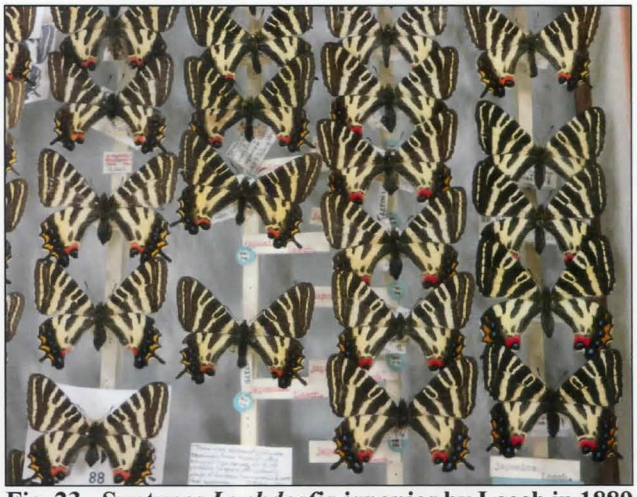

Fig. 23. Syntypes *Luehdorfia japonica* by Leech in 1889 of Nawa's Gifu Butterfly.

Fig. 24. Glass bottom drawers waiting for glass bottoms to be replaced.

Fig. 25. Microscope slide storage cabinets still being used.

I checked the NHM Lepidoptera Collections Website where they say that the collection has approximately 8,712,000 specimens. It is divided into two separate collections. One the British Collection and the other is the rest of the world {B}. When I talked to Geoff he told me that the British butterflies have now been barcoded and digitized. The original figure was 130,000 specimens for them but actually turned out to be 181,545! "Most of the British macros have been barcoded and digitised but the figures are not in yet. There is a small amount of ad-hoc barcoding in the rest of the world collection as a result of projects, loans, etc." He assumes that the actual number now at NHM to be closer to 11 million specimens {D}!

I was impressed by many things. Geoff was extremely careful about making sure that every specimen was protected from damage. The motivation and desire that every specimen will be perfectly preserved and available for hundreds of years in the future is apparent. The practice of using the glass bottom drawers again by having them updated with new bottoms was refreshing. I guess that it would be more expensive than simply throwing them away and buying mass produced new ones. But I find it desirable to recycle them and employ craftsmen to use the beautifully constructed old drawers and give them a new life. Geoff Martin who started collecting Lepidoptera when he was 10 years old, stuck to his interest in them. He eventually earned a degree in Ecology at University College London then "got a full-time position as a curator in 1999 and got the position of collections manger in 2006"{D}. Dona and I found him to be extremely helpful and friendly. Our visit to the museum was an absolute delight and a truly memorable experience.

Credits

A. http://www.nhm.ac.uk/our-science/collections.html
B. http://www.nhm.ac.uk/our-science/collections/entomology-collections/lepidopteracollections.html
C. http://www.nhm.ac.uk/our-science/departments-and-staff/library-andarchives/collections/rothschild-collection. html
D. Mr. Geoff Martin, Collections Manager (Lepidoptera), Department of Life Sciences, The Natural History Museum, Cromwell Road, London, personal communications.
E. http://www.nhm.ac.uk/our-science/departments-and-staff/life-sciences/insects.html
F. Blaine, F. Matthew - 2017, Yasushi Nawa "*The Insect Man" of Japan,* Southern Lepidopterists' News Vol. 39, No. 3
G. Dona Blaine for accompanying me on my adventures and for her editorial suggestions.
H. http://darwin-online.org.uk/content/frameset?itemID=F1830&viewtype=text&pageseq=1

F. Matthew Blaine:
Curatorial Associate
Delaware Museum of Natural History
Research Associate
The Florida State Collection of Arthropods
Research Associate
The McGuire Center for Lepidoptera and
Biodiversity at the Florida Museum of
Natural History, University of Florida

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Painted Lady (*Vanessa cardui*), Abilene, Texas November 9, 2017.

Pearl Crescent (*Phyciodes tharos*), Abilene, Texas November 9, 2017.

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PHOTOS SENT IN BY JOHN F. DOUGLASS
SLS SPRING 2017 FIELD TRIP

Rock Hill Preserve, Florida's Central Panhandle, SLS Spring 2017 Field Trip (Photo by Debbie L. Matthews).

Rock Hill Preserve, Florida's Central Panhandle, SLS Spring 2017 Field Trip (Photo by Bill Boothe).

Florida Panhandle floristics specialist Jim Burkhalter, Apalachee Wildlife Management Area, SLS Spring 2017 Field Trip (Photo by Debbie L. Matthews).

Bill Boothe's focus drifts from Lepidoptera, Blue Springs Recreational Area, Jackson Co., Florida, SLS Spring 2017 Field Trip (Photo by Debbie L. Matthews).

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IT WAS THE BEST OF TIMES; IT WAS THE WORST OF TIMES

BY

KELLY RICHERS

The annual meeting of the Lepidopterists' Society held in Tucson, Arizona, was a successful meeting with great presentations, wonderful hosts, helpful vendors and great surroundings. This article is about none of that. As those of you who know this author, generally most of the presentations are missed as he is out in the field for the vast majority of the meeting. This article is about the fickle weather and collecting found in Arizona during the monsoon season, and how a little knowledge can really help or sometimes really lead one astray, and how no collecting trip is like any other.

The meeting was held from the 29th of July to the 2nd of August, and the schedule was to have the executive meeting on the 29th, presentations on the 30th and 31st, and the banquet on the 1st. The University of Arizona was the host, and Katy Prudic did much of the legwork setting virtually everything up.

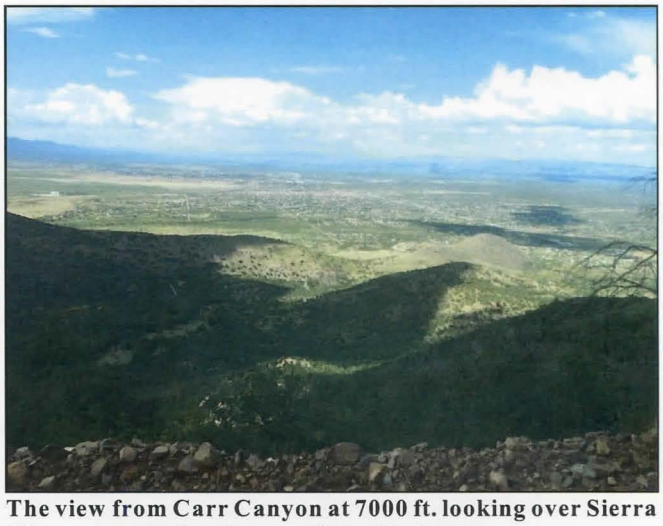
Tucson is about a twelve hour drive from my home base in Bakersfield, so I left by truck at about 9 p.m. on July 27th. Tucson is an ideal location for a base from which to collect southern Arizona. To the south are Box, Florida and Madera Canyon, all fewer than 35 miles away. Further southwest is Pena Blanca, Sycamore Canyon and California Gulch, while to the east is the Patagonia area of Harshaw Road, with Interstate 19 between them. All these areas are less than 1.5 hours away. Even further east are the Huachuca Mountains, easily reached in the same time frame, and including numerous well known canyons such as Garden, Carr, Ash, and Copper at the southern end.

After an uneventful night of driving, and subsequently finding where the meeting was to be held, where I was staying (Air B&B) I headed for Box Canyon, some 20 miles south of Tucson, at the north end of the Santa Rita Mountains, to look for butterflies and day flying moths. Arriving some time before 11 a.m., it was evident that it had been raining, with some significant water in the little stream at the lower bridge, and wetness apparent in various places.

However, there were very few butterflies. If not for catching a few *Microtia elva* , which I had never seen before, I was disappointed, both in the quantity and in the low number of species. Walking upstream from the bridge was not practical because the stream was flowing strongly in the narrower places and I had no water shoes. Downstream there were very few species or specimens. Giving up after an hour I headed for Florida Canyon, where I discovered the same situation, and in addition by 1 p.m. it was clouding up and obviously going to rain.

In a fit of inspiration, I called Dave Wagner, who was intending to attend the meeting, and discovered he was visiting a friend in Ramsey Canyon, in the Huachuca Mountains. Since this was next to Carr Canyon, which was kind to me during a meeting in Sierra Vista many years ago, contacting him was opportunistic. He told me to come on over, as Carr Canyon seemed clear, but by now I could see rain coming into Florida Canyon.

After an hour and a half, I met him in Ramsey Canyon, and he laid out for me a plan to get to the top of Carr Canyon and look for a new geometrid moth, as well as a notodontid that might be there that was new. He said he would join me sometime after 11 p.m. and we could collect off my MV light. I did not know that leaving him would be the beginning of a wild ride which never really ended until three days later.



The view from Carr Canyon at 7000 ft. looking over Sierra Vista towards Tombstone (July 28, 2017).

Having never been to the top of Carr Canyon I took the opportunity to slowly drive the narrow dirt road, which extends for some 4 miles into the canyon. Since it had clouded over, there would be no butterfly collecting, so there was no rush. The drive was beautiful. At least it was until a police car careened behind me with all lights flashing and siren going. Wondering what I did, I pulled over, and he slid around me and tore on up the canyon. Breathing a sigh of relief (who doesn't, even when being as law abiding as I was), I continued, only to have a Forest Service car do the same thing to me thirty seconds later. Thoroughly shaken now, I continued up the canyon at a slow pace.

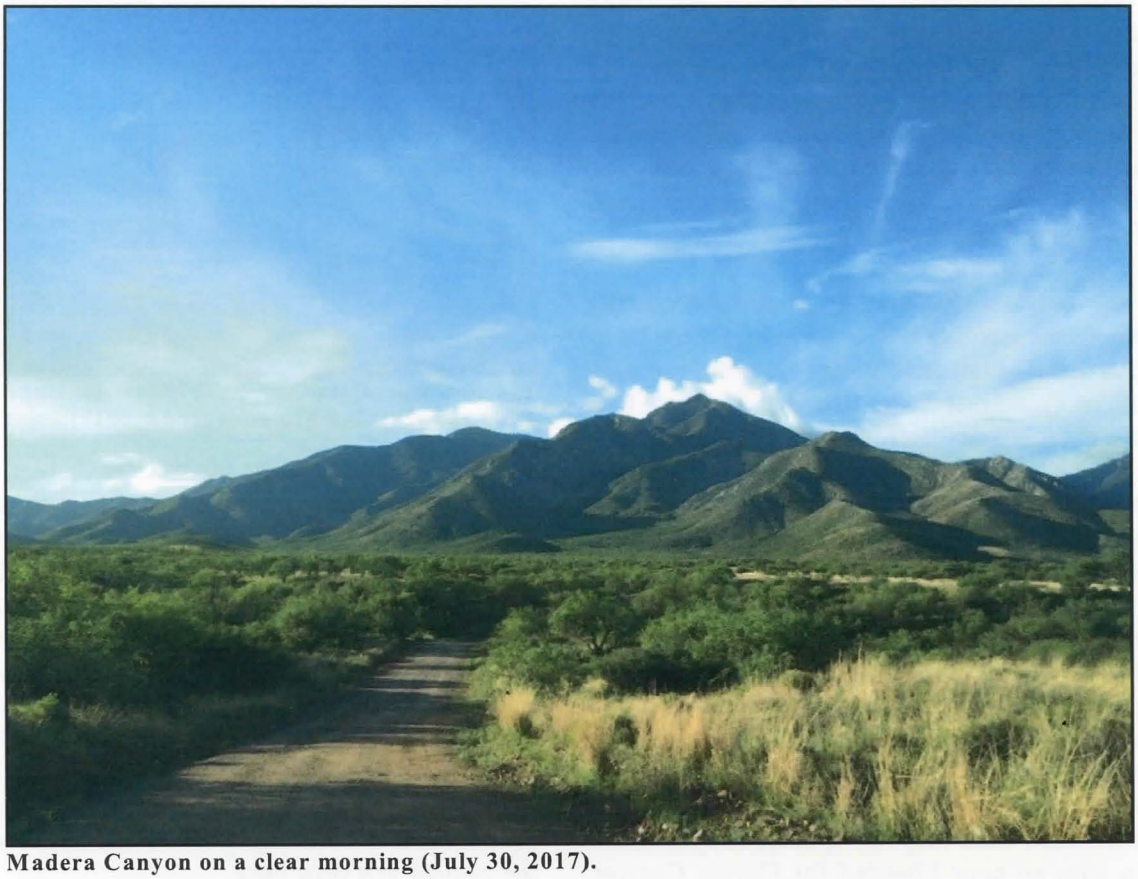
About two miles up I came across the two law enforcement vehicles, lights off and parked, next to a parked pair of cars where there were some hikers, possibly, but other than that there was no indication of anything happening, no other traffic and the canyon was deserted in the upper reaches. I explored, found the turnout where Dave suggested the geometrid might be found, and rested for a bit, and then about 5 p.m. started setting up the 8 traps I had brought, which would give me a great transect of the canyon from top to bottom. I set a trap about every half mile or so (in an off the road spot) and heading downhill, got the first six set when I approached a little bridge near the bottom of the canyon where now some ten law enforcement vehicles, an ambulance and a fire truck were parked.

Squeezing past them, I set the last two traps, turned around and returned as far as the little bridge, where I was stopped and told I could not proceed further. When I asked why, I was told the canyon was closed and didn't I see the sign? Since the supposed sign would have been another mile down toward the highway, and I never had left the canyon, no I hadn't so I parked and waited. Eventually I approached the twenty or so people standing around and asked what was going on, and was told a young man had slipped on a waterfall area and fallen to his death some 500 feet about two miles up. There was no way to get him out but to hike in so they were all gathered waiting.

Although there is no real silver lining to such a tragedy, one aspect made it a little easier. My wife always packs enough water and Gatorade for me to cross the Sahara Desert, so I was able to share with the rescue crews over the next couple of hours some of what she had packed, since they were all in full gear and it was reasonably hot out.

It took several hours, but around 8 they let me go up the canyon again, much more chastened than when I had driven down. Naturally, when I setup to collect, it started to rain, so at 9 I crawled into my truck to sleep for a while. I called Dave and found he was involved in a party and since it was raining, I was on my own. I awoke at midnight, the rain stopped, and I set up a mercury vapor light, but by then I got the heebee jeebies, seeing a bear around every tree, so I only collected for an hour before going inside the truck to sleep.

In the morning , with no imaginary bears in evidence, I collected the traps, which were all working properly with moths inside, and made a flying trip to Tucson for the executive council meeting. I sorted out some of the moths at the meeting and when it was over, got ready to go to the big moth collecting trip in Madera Canyon. In the meantime I talked to some of the locals about conditions.



Madera Canyon on a clear morning (July 30, 2017).

Apparently the monsoon rains had started some three weeks early, and this was more rain than they had gotten since Noah's flood or something, so conditions were a mess. This was borne out by the view to the south and the forecast, which said Madera was going to be rained on all evening, so the trip was cancelled at about 6 p.m.

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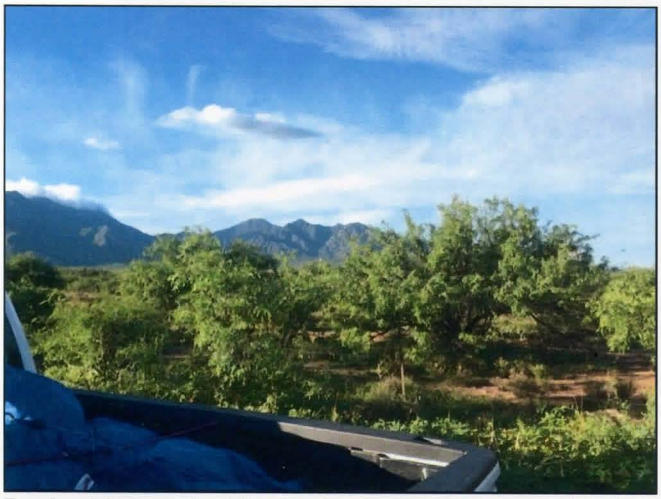
However, being a bear of very little brain, I decided to go solo anyway. Rick Gillmore foolishly volunteered to go with me and we drove down there in gloomy weather, but no rain. We set four traps on the way up, trying to be out of the way of hikers and birdwatchers, most of who had left due to the conditions being wet and misty, and set up a mercury vapor light in the upper parking lot. Some beetle collectors were setting traps also, so the area had a variety of twinkling lights from our endeavors.

It was not raining. Various moths flew in, and we were comfortable, when a ranger came by and talked to us about what we were doing. Satisfied that we were not going to spend the night, he prepared to leave, when a panting jogging skinny Charlie Manson looking individual stopped him and demanded that we stop damaging the environment with our collecting. Really. Things went downhill after that, and we spent the next half hour trying to calm him down with a little reality. In the meantime it started to drizzle, so we had to take down the mercury vapor light anyway, so we eventually left, under the glare of his righteousness, but we still had our traps, which worked very well with covers on them. All in all, a very strange experience.

The next day it poured pretty much all day. We discovered that those who went to Box Canyon blacklighting did well, so I determined to go there that evening (the 30th). I started, with Rick again, and a group of other moth people, including Ken Bliss, setting a trap in Florida Canyon and worked my way with this little caravan of moth collectors toward Box, only to discover that the rain had turned the dirt road into a morass in places. We had several places where people piled out to push and one place where we left the road due to mud.

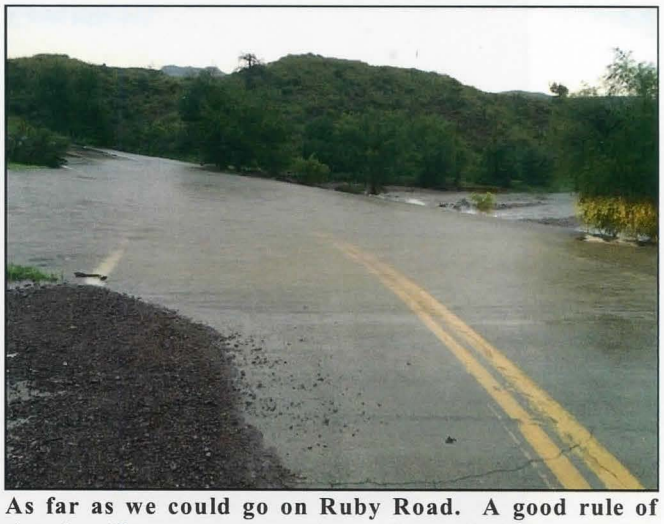


By the third week of the monsoons, the desert has bloomed and greenery is everywhere (outside Box Canyon).

In addition, all the moth collectors in the world had the same idea. We ended up east of the hot spots, setting up in a curve in the road, and not many moths came in to the sheet. However, by socializing down the road we met up with many nice people who let us collect with them on several other mercury vapor light setups. I caught my first *Dysschema howardi* ever, a beautiful female. Interestingly enough, one of the rarest sphinx moths from three previous expeditions, *Manduca muscosa*, was one of the most common this trip. That plus the notodontid *Crinodes biedermani* were found in several locations, but previously I had never caught but one.

The next day, having actually attended the meetings and the Jerry Powell recognition, several of us decided to get out of the rain and go to Pena Blanca, which looked on the weather app. to be south and west of the storm fronts that kept moving across us.

Ah, the joy of being really, really, wrong. The storm turned west and south, and although Chuck Harp and several others of us set out in our trusty vehicles, we were stopped completely, in the pouring rain, when we came across a section of road that looked many feet underwater. Turning in to a parking area we set up, in the pouring rain, under some picnic shelters, to see what idiot moths might fly in for the idiots collecting in the rain. Oddly enough several did. It poured, though, all evening long. It rained so hard I couldn't see where I was driving in the parking lot and I plowed into a picnic bench, ($1700 damage to the front of my truck, if you were wondering) which I never even saw until I dragged the truck off it. Yet, in the midst of all this, Chuck



As far as we could go on Ruby Road. A good rule of thumb – if you cannot see the center strip, it may be too deep. This was for sure.

caught a *Rothschildia cinctus*, one of the great catches of Arizona. As it got later, *Antheraea oculea* started flying in through the rain, amazingly.

At various times, teams of five or six Forest Service vehicles would race by in different directions, probably saving lives, since the rain continued to get worse. At 11:30 we gave up and headed back.

A perfect morning result at Florida Canyon with the trap waiting for pickup.

The 1st was banquet night, so any moth trapping would be nearby. I decided to set 4 traps along Florida Canyon. These did the best of the entire trip, only 20 miles from the meeting. No rain, beautiful surroundings. Figures, doesn't it?

In the morning I picked up the traps and headed out, having learned the following important things about Arizona collecting:

1. The monsoons are very, very unpredictable.

2. It is difficult to collect during a monsoon heavier than any in the last 30 years.

3. The beginning of the monsoon has different moths in large part from the back end.

4. Wet moths are a mess.

5. And, finally, I am sure glad of the collectors who went with me, as I get fewer heebee jeebies.

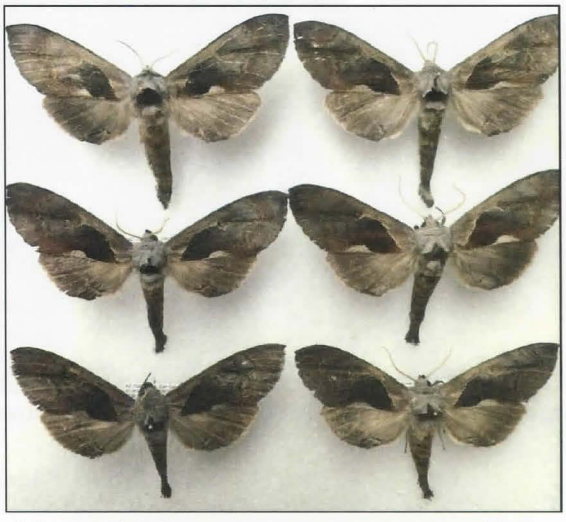
So, in conclusion, for any collectors heading that way, Arizona is wonderful even when it is terrible.

Storms roll in and sometimes out quickly, like this one on the interstate west of Phoenix (August 2, 2017).

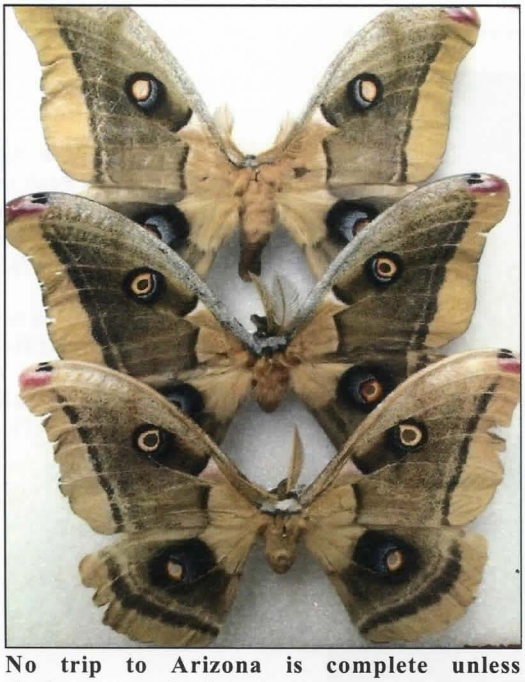
Microtia elva, formerly very rare in Arizona, was easily caught or seen in Box and Florida Canyons. Two females at the bottom.

Lirimiris truncata and *Pseudhapigia brunnea* are two of the more attractive large notodontids in arizona.

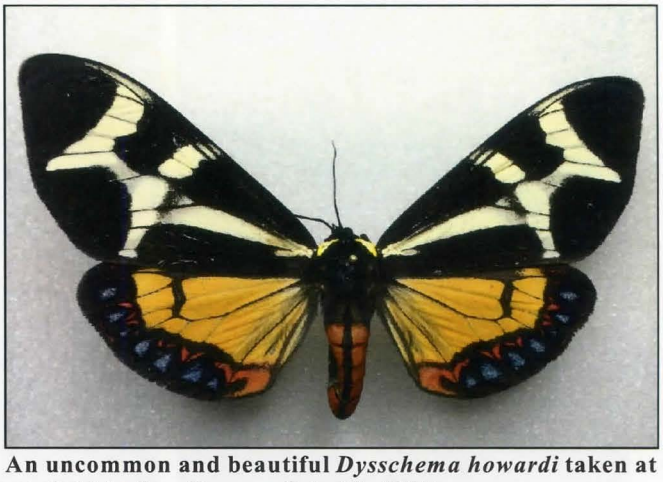
Manduca muscosa was at many sites, in great profusion.



Crinodes biedermani, a strange Notodontid that looks like a Sphingid, was also abundant for the first time in 4 trips I have made.



No trip to Arizona is complete unless *Antheraea oculea* is seen.



An uncommon and beautiful *Dysschema howardi* taken at mv light in Box Canyon July 30, 2017.

Large Notodontids, Saturniidae and Sphingidae unsorted from the meeting trip.

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

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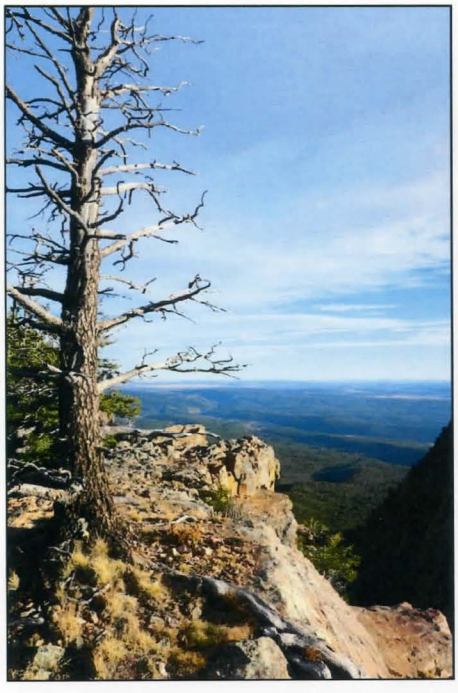

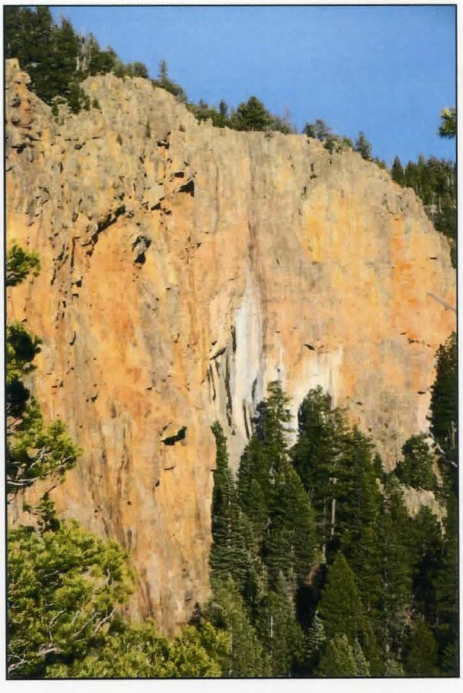

Pecos Wilderness, New Mexico: View from Hermit's Peak looking south towards Las Vegas. (Credit: Michael P. Blanton, PhD, November 11, 2017).

Pecos Wildnerness, New Mexico: View from south face of Hermit's Peak taken around sunset (Credit: Michael P. Blanton, PhD, November 11, 2017).

LACOSOMA CHIRIDOTA GROTE, 1864 (LEPIDOPTERA: MIMALLONIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

Fig. 1. ***Lacosoma chiridota*** phenotypes: a-d. males, e-j. females.

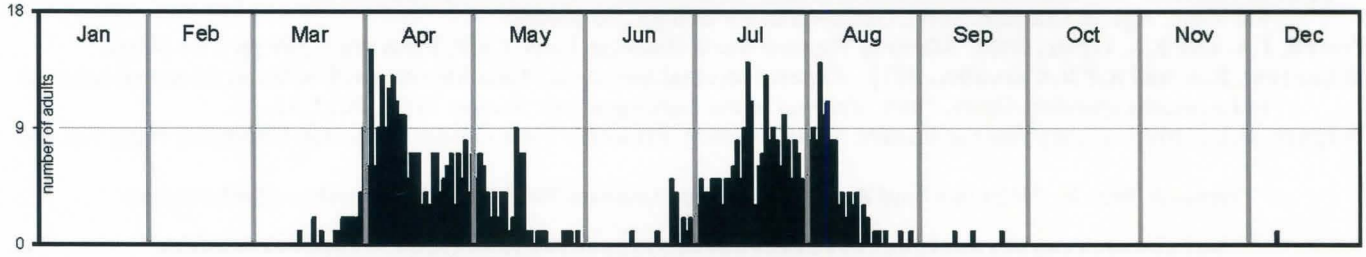

Fig. 2. Adult ***Lacosoma chiridota*** captured in Louisiana. n = 652

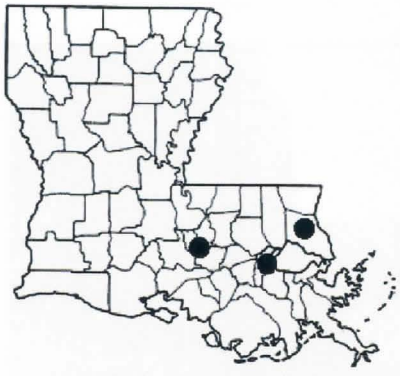

Fig. 3. Parish records for ***L. chiridota***

The uniquely shaped moth ***Lacosoma chiridota*** Grote (Fig. 1) was described from a single male, type locality is Pennsylvania. This species exhibits significant sexual dimorphism. Grote (1864) reported the larvae feed upon oak species.

Franclemont (1973) provided very little information about this species, disposing of it with a mere eight lines of text. This author states ***chiridota*** occurs from "*southern Ontario and southern New England south to central Florida west to the Plains and south-central Texas*", in the months *'March, April, and June'*. This author illustrated one male and two females in Fascicle 20.1, plate 3.

Covell (1984) stated ***chiridota*** occurs "April to September" (*in eastern North America*), and that "males rarely come to light". Heitzman and Heitzman (1987) reported ***chiridota*** is uncommon to rare in Missouri, most specimens coming to light, and is single brooded in that state. In Louisiana, ***chiridota*** is double brooded (Fig. 2).

Heppner (2003) listed the range for ***chiridota*** from Ontario to Florida, and Iowa to Texas, and feeding upon various species of ***Quercu s*** L., the larval foodplants. Like so much other misinformation throughout the most recent Peterson Field Guide (Beadle and Leckie, 2012) state ***chiridota*** is "uncommon", and "strictly nocturnal, adults will come to lights in small numbers". In fact, I have captured tens of thousands of both sexes of ***chiridota*** in my light traps over the past half century. Wagner (2005) also incorrectly stated ***chiridota*** has one brood in eastern North America, southern Ontario and New Hampshire south to Florida and Texas. Only the species ***Lacosoma arizonicum*** Dyar was covered by Powell and Opler (2009).

More recently, St Laurent and Carvalho (2017) reported for the first time upon the diurnal behavior of ***Lacosoma chiridota***. Female pheromone releasing behavior was recorded in the late afternoon in Gainesville, Florida. A single diurnal male was recorded responding to a *'calling'* female at 1745 hours. These same authors stated the number of female ***chiridota*** far outnumber the males in all major entomological collections visited. These authors also provided color images of dorsal and ventral views of both sexes of ***chiridota***, and also images of the only other member of the genus known to occur in the U.S., ***Lacosoma arizonicum***.

No doubt, the few confirmed parish records in Louisiana illustrated in Fig. 3, of this *'Civil War era'* described species is due to my lax record keeping. This species occurs over much, if not all, of the state of Louisiana. The 652 adults illustrated in my phenogram (Fig. 2) originate from my personal light trapping records captured over several years. I thank Ryan St Laurent for most helpful comments concerning this species account.

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

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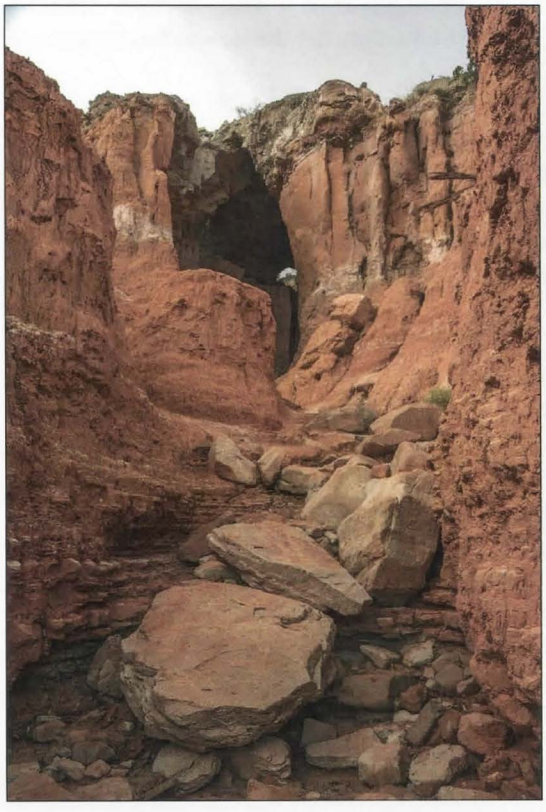

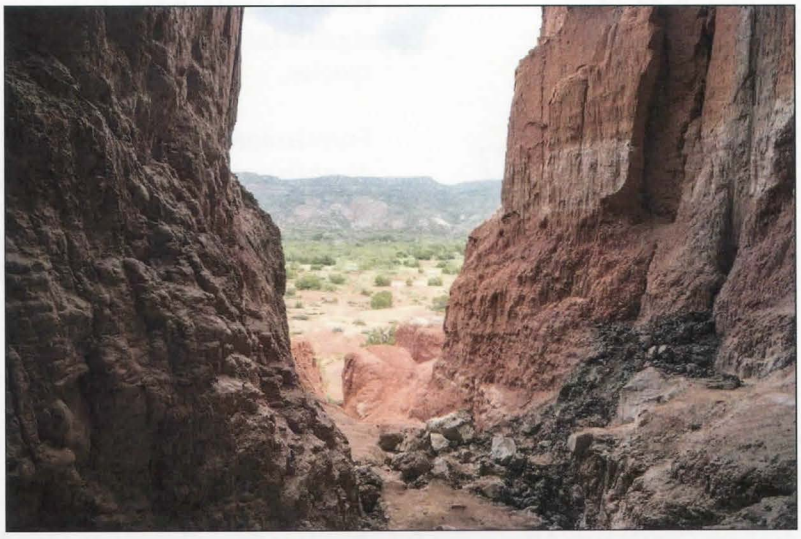

"Big Cave" in Palo Duro Canyon State Park near Amarillo, Texas, 2017 (photos by James Bowers).

[Not so big the "Big Cave" - The Editor]

MORE AROGOS SKIPPERS IN LOUISIANA

BY

CRAIG W. MARKS

In 2013, I reported in this Newsletter (Vol. 35, No. 4, p. 185) about finding colonies of Arogos Skippers (Atrytone arogos) at the Crosby Arboretum on the outskirts of Picayune, MS, and Abita Creek Flatwood Preserve in St. Tammany Parish, LA. As I presented at that time, the Arogos Skipper had been listed from Louisiana based upon a small number of records in the extreme eastern portion of the State. Lambremont (1954) first reported it based on a single specimen caught in St. Tammany Parish on 9/8/50. Gayle Strickland found it in a large colony within the same parish on 8/12/70. Strickland described the habitat as open pine flatland just north of Lake Pontchartrain.

Re-summarizing some of my previous research, in a US Forest Service publication by Schweitzer, Minno and Wagner, those authors reported that while the populations along the Gulf Coast should be included within the nominate subspecies, *A. a. arogos*, "a variant is known from eastern LA, southern MS, southern AL and the western FL Panhandle". They indicated that while the prairie race of this skipper can be locally numerous, the eastern subspecies "has declined greatly throughout its eastern range." It may be extirpated from Georgia, North Carolina, South Carolina and Virginia in the southeast. They reported that the Gulf Coast ecotype has had the most occurrences in the recent past (to include Louisiana, Mississippi, Alabama and Florida), but that Hurricane Katrina struck this region in August of 2005, during the latter season flight period, and it was still unknown what impact that storm had on that population.

Since locating that first colony at Abita Creek, I have continued my searches in an effort to better define this skipper's actual range within the State. For example, I found the area of St. Tammany Parish where Stickland found it in 1970 is now much more urban. Via personal conversations with Strickland, he reported also seeing this skipper at Tickfaw State Park in Livingston Parish (two parishes east of St. Tammany along the I-10 corridor) in August during the early 2000's. I have since searched Tickfaw State Park on several occasions without any success.

In early August, 2014, Dave Patton and I drove Lake Ramsey Savannah Preserve in St. Tammany Parish. Lake Ramsey is west of Abita Creek, north of Covington, and like Abita Creek, it is owned by the Nature Preserve and open to the public. We walked the open field through which the Nature Conservancy trail runs. Within 10 minutes of arriving, in a section of the preserve filled with pitcher plants, we found a male perched on a tall yellow flower exhibiting similar behavior as I had witnessed at both Crosby and Abita Creek. In just over about 1.5 hrs, we saw 9 Arogos Skippers, and I have no doubt we could have added to this total, but we had other places to visit. Specifically, we drove to Abita Creek. Within 5 minutes of walking into the pitcher plant bog, we were seeing Arogos Skippers, again, perched on the yellow flowers. In about one hour 's time we saw 16 Arogos Skippers. We easily could have doubled that number but it was time to move on.

In early August, 2015, I was able to gain access to the Talisheek Pines Wetland Preserve near Bush, Louisiana, north of Abita Creek but still in St. Tammany Parish. Talisheek is also a TNC property but is not open to the public so I had to get permission to go on the property. I chose it because I was advised by TNC personnel that there was a large pitcher plant bog there. With the help of Ritchie Mitchell, one of the property's hunting leaseholder, I found another apparently healthy colony of this rare (in Louisiana) skipper. Mitchell was such a gracious host that he even invited me to jump on the back of his four-wheeler and he drove me into the back of the property (limited road access) to a bog he thought would fit my needs. Within 30 minutes, I had found 26 Arogos Skippers.

Washington Parish is located between Crosby Arboretum and St. Tammany Parish so I decided to search that parish for colonies between Crosby and Talisheek. Through my "butterfly" connections at the Louisiana Department of Wildlife and Fisheries, I learned there was a pitcher plant bog near Enon, Louisiana, in a power-line right of way. I visited that location twice (August of 2016 and 2017), and, despite finding all of the species that typically fly with the Arogos Skipper in its pitcher plant dominated preferred habitat (Palamedes Swallowtails, Georgia Satyrs, Neamathla skippers, Whirlabouts and Tawny-edged skippers), I have yet to see any Arogos Skippers.

I believe there are three broods in Louisiana, spring, early summer and early fall. On May 30, 2015, I again visited Lake Ramsey, primarily searching for King's Hairstreaks. In addition to finding that hairstreak, I saw only one skipper, a lonely male Arogos that landed on a flower in front of me as I walked the pitcher plant area toward the back of the property. I also discovered that Vernon Brou has some specimens in his personal collection, caught on his property just down the road

from Abita Creek. These included a male caught in late April, and a female caught in early June.

I also discovered, as part of my research effort for my upcoming book on Louisiana's Butterflies, the existence of an old specimen included within the collection of the Entomology Division at the Peabody Museum of Natural History at New Haven, Connecticut. Through the assistance of Larry Gall, the Division's Collections Manager, I was able to obtain information about that specimen, caught by Herman P. Wilhelm on June 22, 1961, near Boutte in St. Charles Parish. Larry was kind enough to send me a picture of that specimen (see below) and it is clearly an Arogos female with shading consistent with those I have found in St. Tammany Parish.

As such, Arogos skippers have been recorded in three of Louisiana's eastern parishes, Livingston, St. Charles and St. Tammany. I continue in my belief it will also be found in Washington Parish, as well as potentially in Tangipahoa Parish (the parish between St. Tammany and Livingston). Over the winter I will be researching the existence of any pitcher plant bogs near Boutte in St. Charles Parish and planning a visit there next August to see if this unique species is still present there.

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ERRATUM

The last issue of the NEWS (Vol. 39, pp236-240) included an article I wrote about a trip this past summer to Minnesota. That edition of my article included one mistake and one deletion. Specifically, at the bottom of p. 238, there are two pictures that were mislabeled. The caption for the top picture should read, "Silvery Checkerspot (left) and Harris Checkerspot (right), ventral." The bottom picture should read, "Silvery Checkerspot (left) and Harris Checkerspot (right) dorsal." The correct orientation was lost when the pictures were changed from a vertical plane to a horizontal plane as part of the publication process.

The deletion is on p. 239, in the last sentence of the first full paragraph of that page. That sentence should have read, "As we approached a T-intersection, I recognized the area and asked Mike to pull over on the shoulder. Before we could even exit Mike's truck, we could see two male Baltimores feeding at some thistle blooming in the ditch beside the road."

[Note: These were errors by the Editor - sorry for the problem.]

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

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RAVINE CEMETERY RESTORATION
"LIFE WHERE THERE IS DEATH"
BY
CANDY SARIKONDA

The one-year anniversary of my father's passing was fast-approaching. My thoughts frequently turned to memories of him, and ways that I could preserve those memories. I contemplated how others might be doing the same over thoughts of their loved ones.

I serve as co-Chair of the City of Sylvania's Tree Commission. The city Forestry Officer approached our commission with an idea for a restoration project. The city owns historic Ravine Cemetery, with stunning landscape vistas, gorgeous native trees and a beautiful ravine running through the center of the cemetery. The forestry officer had stopped mowing the ravine several years ago, allowing the native seedbank to grow. Once again native plants and trees were beginning to flourish in the ravine. He wondered if our commission might take on the task of further restoring the ravine, adding more native plants to the ravine site.

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

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

Ravine Cemetery in its fall splendor. "The fall colors of the sassafras trees are especially beautiful. We are removing the invasive Canada thistle bit by bit, and planting great Blue Lobelia, swamp milkweed, and wingstem in its place."

Our Sylvania Tree Commission team is made up of several members from the Oak Openings chapter of Wild Ones, and we quickly developed a plan for restoring the ravine with Ohio genotype native plants. Tree Commissioners collected native seed the previous fall, grew plugs over the summer, and divided existing

Left to Right: Cheryl Rice, Pat O'Brien, Rick Barricklow, Eric Peterson, Candy Sarikonda, and Toni Andrews.

Rick Barricklow and Candy Sarikonda.

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

As we planted, visitors came by, walking their dogs. The feedback regarding our efforts was very positive. Visitors expressed excitement over creating butterfly and bird habitat on the cemetery grounds. One visitor asked if we would assist him in creating habitat on his own property, and shared suggestions for other city properties where additional restorations could take place. It was clear this restoration would have benefits far beyond the ravine. As we finished planting and gathered our equipment, I turned back to admire our work. The ravine was lit up in the sunny reds, yellows and oranges of fall. The warmth of the sun shone on my face. I closed my eyes, and immediately felt at peace.

Resources

http://www.americanforests.org/magazine/article/in-the-garden-cemetery-the-revival-of-americas-first-urban-parks/
https://www.theatlantic.com/national/archive/2011/03/our-first-public-parks-the-forgotten-history-of-cemeteries/71818/

"Printed with permission from the Wild Ones Journal"

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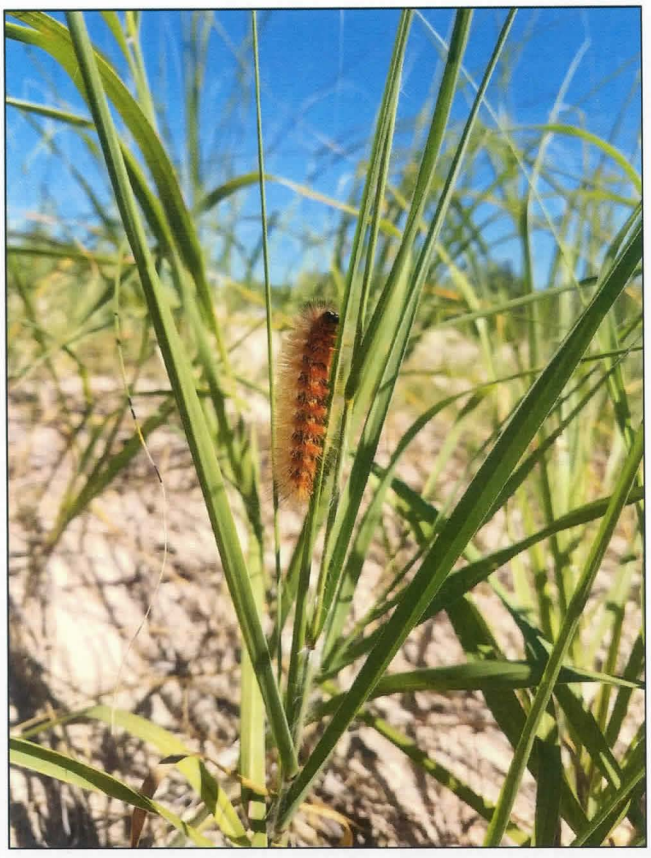
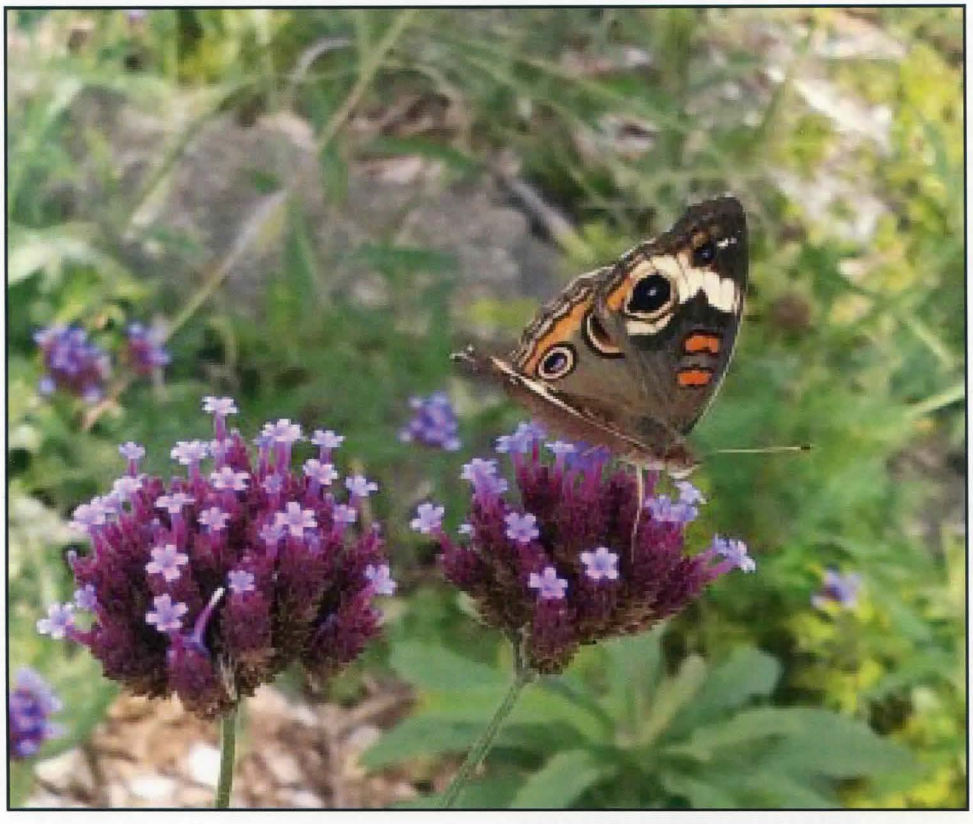
Abilene Texas (2017).

PHOTOGRAPHS
BY
MAYA SARIKONDA



Caterpillar was spotted hurriedly crawling across the hot sand in Petoskey State Park, MI, and placed in the cool grass. Possibly a Virginia Tiger moth? (July 28, 2017)



Buckeye nectaring on *verbena bonariensis* (October 21, 2017)

CATOCALA MYRISTICA KONS AND BORTH, 2015, IN LOUISIANA

BY

RICKY PATTERSON AND VERNON ANTOINE BROU JR.

Fig. 1. ***Catocala myristica***

On July 19, 2017, five specimens of the recently described underwing moth ***Catocala myristica*** Kons and Borth (Fig. 1) were collected while tapping tree trunks by the senior author as they rested on the hostplant, Nutmeg Hickory ***Carya myristiciformis*** (F. Michx.) Elliott (1824). The location was a small stand of Nutmeg Hickory in the Kisatchie National Forest, Winn Parish, Louisiana.

This species of moth closely resembles ***Catocala robinsonii*** Grote, but is distinguished from this species by wing pattern, genitalia, and DNA analysis (Kons and Borth). ***C. myristica*** appears slightly smaller in size than ***robinsonii,*** and has rounder, and more intense brown in color reniform spots. As in ***robinsonii***, there are multiple phenotypes of this moth. Two of the five collected adults are illustrated in Fig. 1.

Nutmeg Hickory is found in the southern U.S., from North Carolina south to Georgia, and west to Texas, Oklahoma, and Arkansas (USDA NRCS Plants Database). It has been described as the rarest of the Hickories, and can be confused with the similar appearing Shagbark Hickory ***Carya ovata*** (Mill.) K. Koch, which also occurs more abundantly across the northwest areas of Louisiana. Brown (1945) reported ***Carya myristiciformis***, is apparently not common, found on black calcareous soils in Natchitoches and Winn Parishes, and the fruit being the shape and size of a whole nutmeg, ***Myristica fragrans*** Houtt. ***C. myristiciformis*** was reported (Cocks, 1921) to also occur in Richland Parish.

Kons and Borth (2015) recorded specimens of ***myristica*** from Mississippi and South Carolina in their original description. Since that time it has also been reported from Georgia (Adams, 2016) and Alabama (Robert Borth, personal communication). These Louisiana specimens are new state records, and represents the most westwardly known location of this newly recognized species of moth. We note among past literature predating recent decades, the scientific name of nutmeg hickory was spelled ***Carya myristicaeformis***.

The authors thank Robert Borth, and David Moore of the U.S. Forest Service, Kisatchie National Forest, for their assistance.

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Kons Jr., H. L. and **R. J. Borth,** 2015. A new species of Catocala (Lepidoptera: Noctuidae) from the Southeastern United States. *Bull. Peabody Mus. Nat. Hist.* 56 (1): 55-65.

(Ricky Patterson, 400 Winona Road, Vicksburg, Mississippi 39180; E-Mail: rpatte42@aol.com
Vernon Antoine Brou Jr. 74320 Jack Loyd Road, Abita Springs, Louisiana 70420; E-mail: vabrou@bellsouth.net)

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NOTES ON *CATOCALA* ASSOCIATED WITH *CRATAEGUS* (HAWTHORN) IN FLORIDA

BY

JEFFREY R. SLOTTEN

Catocala are some of the most studied moths in the world. There are many species, and they are relatively large and sometimes quite colorful (especially the hindwings) with interesting patterns. The adults of many species are attracted to lights and artificial bait at night, and some can be flushed off of trees during the daytime.

I arrived in Florida to begin entomological studies at the University of Florida in 1977. I was fortunate to meet several amateur lepidopterists who were interested in butterflies and moths, and were eager to find others interested in scouting out new habitats — and branching out to do more than just collect adults. My comrades at the time included Tom Neal, Bob Godefroi, Dave Baggett, Charles Stevens, Richard Gillmore and Steve Roman. We made a number of excursions to Liberty County, Florida, especially in and around the Torreya State Park area, which is rich in different plant communities.

Some of us became particularly interested in the genus *Catocala* (Noctuidae) and began discovering the numerous species that occur in Florida. There are currently at least 42 species of *Catocala* that have been collected in the state of Florida, as follows:

Juglandaceae (hickory/walnut) feeders: *C. agrippina, C. consors, C. dejecta, C. epione, C. insolabilis, C. lacrymosa, C. maestosa, C. nebulosa, C. neogama, C. sappho, C. ulalume, C. vidua*

Myricaceae (bayberry) feeders: *C. muliercula*

Salicaceae (willow/poplar) feeders: *C. amatrix, C. cara, C. carissima*

Ericaceae (blueberry) feeders: *C. andromedae, C. gracilis, C. louiseae*

Fabaceae (leadplant) feeders: *C. amestris, C. slotteni*

Fabaceae (honey locust) feeders: *C. minuta*

Rosaceae (chokeberry) feeders: *C. praeclara* (includes *charlottae*)

Rosaceae (crabapple) feeders: *C. grynea*

Rosaceae (plum/cherry) feeders: *C. clintoni, C. ultronia, C. praeclara*

Rosaceae (hawthorn) feeders: *C. aestivalia, C. alabamae, C. clintoni, C. grisatra, C. lincolnana, C. mira, C. miranda, C. orba, C. pretiosa*

Fagaceae (oak) feeders: *C. amica, C. ilia, C. lineella, C. jair, C. coccinata, C. connubialis, C. messalina, C. micronympha, C. similis, C. umbrosa*

Here I provide some notes on the 9 *Crateagus*-feeding *Catocala* found in Florida. The adults are shown in Figures 1-9 and their larvae in Figure 10 (larvae of some of the species have other color forms not shown here).

Daniel Ward (2009) listed 11 species of *Crataegus* in Florida. There have been many revisions to this genus over the years, and the following lists the species presently known to occur in Florida and their habitats:

C. michauxii Persoon var. *lacrimata* (Weeping Haw/ Summer Haw) (Small) D. B. Ward: dry to moist woodlands, fencerows and open pastures

C. uniflora Muench. (One-Flowered Haw): low woodlands

C. phaenopyrum (L. f.) Medic. (Washington Haw): wet flood plain forests and moist wooded slopes

C. marshallii Egglest (Parsley Haw): moist calcareous wooded slopes

C. spathulata Michx. (Red Haw): flood plains, river bottom forests and slopes

C. viridis L. (Green Haw): upper woodlands, moist hammocks and slopes

C. flava Ait. (Smooth Haw): pond margins and creek banks

C. aestivalis (Walt.) Torr. & Gray (May Haw): streams and river banks (Escambia County)

C. opaca (Hook & Arn.) (Apple Haw): no habitat information provided

C. rufula Sarg. (Rufous May Haw): flood plain forests, and moist hammocks

C. crus-galli L. (Cockspur Haw): open woodlands and upland woods

The larvae of the nine *Crataegus*-feeding species of *Catocala* that occur in Florida are host specific to certain *Crataegus* in certain habitats. Some species feed on a variety of *Crataegus,* whereas others seem to be tied to only one or two species. *Catocala aestivalia* larvae have been found on *Crataegus* growing along

Fig. 1. *C. aestivalia*

Fig. 2. *C. alabamae*

Fig. 3. *C. clintoni*

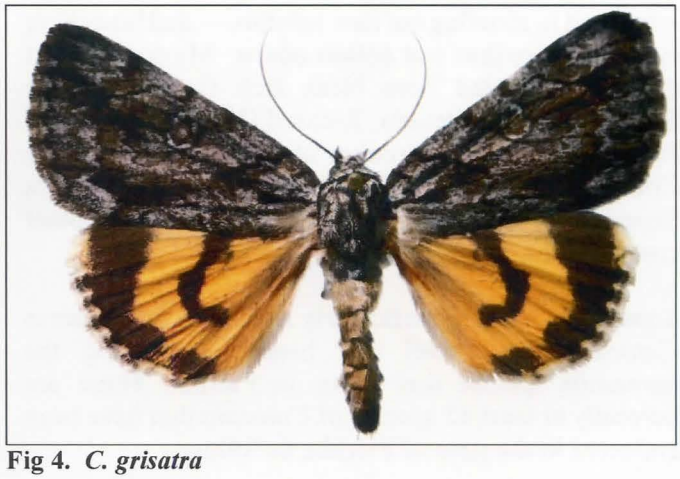

Fig 4. *C. grisatra*

Fig. 5. *C. lincolnana*

Fig. 6. *C. mira*

Fig. 7. *C. miranda*

Fig. 8. *C. orba*

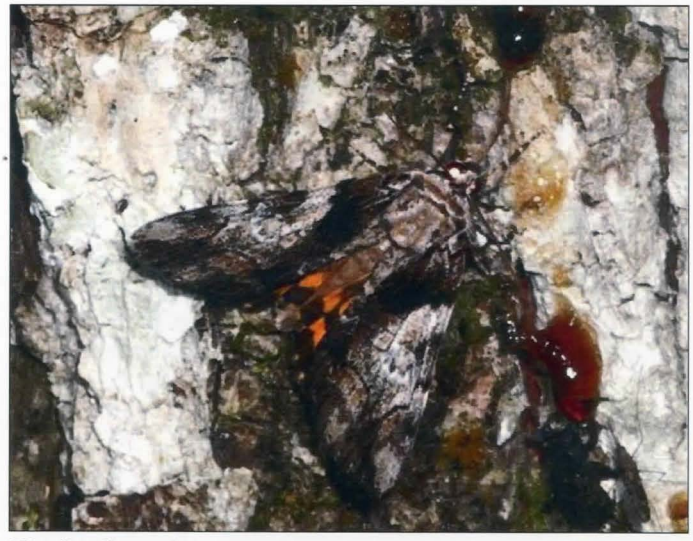

Fig. 9. *C. pretiosa*

creeks and rivers in low lying areas. The species was named for the host *Crataegus aestivalis* but revisions in nomenclature have changed the status of this identification. *Catocala alabamae* larvae are mostly found on *Crataegus* growing in dry sandy habitats. *Catocala clintoni* larvae are also found on *Crataegus* growing in dry sandy habitats, but they also use *Prunus* and other *Crataegus* growing in rich deciduous woods. *Catocala grisatra* larvae have only been found on *Crataegus* growing in dry upland woods, often with *Catocala alabamae* and *Catocala pretiosa*. Both *Catocala lincolnana* larvae and *Catocala orba* larvae seem to prefer *Crataegus marshallii* growing in floodplains along rivers, streams and creeks. *Catocala mira* larvae can be found in dry and wet habitats and on various species of *Crataegus*. *Catocala miranda larvae* can be found on *Crataegus spathulata* and *Crataegus viridis* in rich deciduous woodlands.

Fig. 10. Mature larvae of Rosaceae-feeding *Catocala*. A: *Catocala aestivalia;* B: *Catocala alabamae;* C: *Catocala clintoni;* D: *Catocala grisatra;* E: *Catocala lincolnana;* F: *Catocala mira;* G: *Catocala miranda;* H: *Catocala orba;* I: *Catocala pretiosa;* J: *Catocala praeclara*

Catocala larvae found in the wild are often parasitized by Hymenoptera and Diptera, as is true for many other lepidoptera. Rearing larvae from ova obtained from wild females is the best way to minimize parasitism, but this is not always the case as larvae may occasionally ingest eggs of parasites from leaves brought in from the wild.

Richard Gillmore and Steve Roman (who are current as well as Charter Members of the Southern Lepidopterists' Society) were the first to have keyed in on or discovered the larval hosts of several of the *Catocala* species that occur in Florida. They did this by beating branches of *Crataegus* with baseball bats after placing white bedsheets under the sheets, and recovering the larvae that fell onto the sheets. They brought these back to their homes or labs and reared them out to establish species identities. I took a particular interest in this activity and have reared all nine *Crataegus*-feeding *Catocala* species through the years. Other lepidopterists who have contributed information concerning rearing/collecting of the *Catocala* of Florida include Tom Carr, Hugo Kons, John Peacock and Darryl Willis.

There is always the chance that there may be other as yet undescribed species awaiting discovery in Florida, and this prospect always fuels my enthusiasm! I hope interest will continue on the study of *Catocala* in Florida and enrich our knowledge of these fascinating moths.

Acknowledgments

Images of live adults were taken by Robert J. Borth (Mequon, WI). Pinned specimens of *C. grisatra* and *C. miranda* were taken by the author and photoshopped by Bob Borth. Larval images were taken as slides by the author, and these were digitized by Lawrence F. Gall (New Haven, CT).

I thank Lawrence F. Gall and Robert J. Borth for reviewing this paper and making excellent suggestions to improve the text.

Literature Cited

Ward, Daniel, (2009). Keys to the flora of Florida: 21, *Crataegus* (Rosaceae). *Phytologia* 91: 18-25.

Explanation of Figures

Figures 1-9. Adults of Rosaceae-feeding *Catocala*. 1: *Catocala aestivalia;* 2: *Catocala alabamae;* 3: *Catocala clintoni;* 4: *Catocala grisatra;* 5: *Catocala lincolnana;* 6: *Catocala mira;* 7: *Catocala miranda;* 8: *Catocala orba;* 9: *Catocala pretiosa*

(Jeffrey Slotten, E-Mail: jslotten@bellsouth.net)

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STATE RECORD *GONODES LIQUIDA*

BY

MIKE RICKARD

***Gonodes liquida* (Moschler, 1886), Texas record, November 5, 2017, Mission, TX. Previously recorded only from southern Florida (Photo by Mike Rickard).**

REPORTS OF STATE COORDINATORS

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

Vitaly Charny sends in the following report for 2017 from compiled lists of data collected from various locations in Alabama:

Locations for these butterflies are the following:

Wildlife Management Area:
- Oakmulgee
- Choccolocco

Nature Preserves:
- Cane Creek Canyon
- Limestone Park
- Ruffner Mountain
- Little River Canyon
- Moss Rock
- Dauphin Island

The Nature Conservancy Sites:
- Bibb County Glades
- Splinter Hill Bog
- Prairie Grove Glades
- Barton's Beach

Wilderness:
- Dugger Mountain

State Parks:
- Oak Mountain
- DeSoto
- Lake Guntersville
- Blakeley
- Paul Grist

Recreation Areas:
- Perry Lake Park
- Payne Lake
- Coleman Lake
- Bay Front Park

In the following list there are 5 butterflies that were found in most previous years but not reported for 2017. Just had no opportunity to be in the right place at the right time. Those butterflies are:

Copaeodes minimus	Southern Skipperling
Poanes yehl	Yehl Skipper
Callophrys henrici	Henry's Elfin
Satyrium liparops	Striped Hairstreak
Nymphalis antiopa	Mourning Cloak

The Butterfly list for Alabama in 2017 is as follows:

Genus Species	Common Name	Number of individuals	% of Total
Epargyreus clarus	Silver-spotted Skipper	40	0.98
Urbanus proteus	Long-tailed Skipper	47	1.15
Achalarus lyciades	Hoary Edge	51	1.24
Thorybes bathyllus	Southern Cloudywing	24	0.59
Thorybes pylades	Northern Cloudywing	39	0.95
Thorybes confusis	Confused Cloudywing	4	0.10
Erynnis brizo	Sleepy Duskywing	12	0.29
Erynnis juvenalis	Juvenal's Duskywing	65	1.58
Erynnis horatius	Horace's Duskywing	94	2.29
Erynnis zarucco	Zarucco Duskywing	12	0.29
Erynnis baptisiae	Wild Indigo Duskywing	23	0.56
Pyrgus communis	Common Checkered/White-Skipper	17	0.41
Pyrgus oileus	Tropical Checkered-Skipper	26	0.63
Nastra iherminier	Swarthy Skipper	3	0.07
Lerema accius	Clouded Skipper	46	1.12
Ancyloxypha numitor	Least Skipper	14	0.34
Hylephila phyleus	Fiery Skipper	50	1.22
Atalopedes campestris	Sachem	11	0.27
Polites themistocles	Tawny-edged Skipper	3	0.07
Polites origenes	Crossline Skipper	1	0.02
Polites vibex	Whirlabout	8	0.20
Wallengrenia otho	Southern Broken-dash	4	0.10
Wallengrenia egeremet	Northern Broken-dash	6	0.15

Pompeius verna	Little Glassywing	16	0.39
Anatrytone logan	Delaware Skipper	1	0.02
Problema byssus	Byssus Skipper	6	0.15
Poanes hobomok	Hobomok Skipper	5	0.12
Poanes zabulon	Zabulon Skipper	26	0.63
Poanes viator	Broad-winged Skipper	2	0.05
Euphyes vestris	Dun Skipper	8	0.20
Atrytonopsis hianna	Dusted Skipper	1	0.02
Amblyscirtes hegon	Pepper and Salt Skipper	8	0.20
Amblyscirtes aesculapius	Lace-winged Roadside-Skipper	64	1.56
Amblyscirtes vialis	Common Roadside-Skipper	5	0.12
Lerodea eufala	Eufala Skipper	1	0.02
Oligoria maculata	Twin-spot Skipper	8	0.20
Panoquina ocola	Ocola (Long Wing)	101	2.46
Megathymus yuccae	Yucca Giant Skipper	3	0.07
Battus philenor	Pipe-vine Swallowtail	89	2.17
Eurytides marcellus	Zebra Swallowtail	19	0.46
Papilio polyxenes	Black Swallowtail	15	0.37
Papilio glaucus	Tiger Swallowtail	110	2.68
Papilio troilus	Spicebush Swallowtail	83	2.02
Papilio palamedes	Palamedes Swallowtail	4	0.10
Papilio cresphontes	Giant Swallowtail	4	0.10
Pieris rapae	Cabbage Butterfly	2	0.05
Pieris virginiensis	West Virgina White	2	0.05
Anthocharis midea	Falcate Orangetip	19	0.46
Colias philodice	Clouded Sulphur	3	0.07
Colias eurytheme	Orange Sulphur	11	0.27
Zerene cesonia	Southern Dogface	17	0.41
Phoebis sennae	Cloudless Sulphur	66	1.61
Eurema daira	Barred Yellow	18	0.44
Pyrisitia lisa	Little Yellow	49	1.19
Abaeis nicippe	Sleepy Orange	57	1.39
Feniseca tarquinius	Harvester	4	0.10
Lycaena phlaeas	American Copper	1	0.02
Atlides halesus	Great Purple Hairstreak	1	0.02
Callophrys grineus	Juniper Hairstreak	1	0.02
Callophrys niphon	Eastern Pine Elfin	1	0.02
Satyrium titus	Coral Hairstreak	24	0.59
Satyrium calanus	Banded Hairstreak	3	0.07
Calycopis cecrops	Red-banded Hairstreak	147	3.58
Strymon melinus	Gray Hairstreak	4	0.10
Parrhasius m-album	White M Hairstreak	4	0.10
Cupido comyntas	Eastern Tailed-Blue	110	2.68
Celastrina ladon	Spring Azure	3	0.07
Celastrina neglecta	Summer Azure	96	2.34
Calephelis virginiensis	Little Metalmark	16	0.39
Libytheana carinenta	American Snout	24	0.59
Danaus plexippus	Monarch	13	0.32
Agraulis vanillae	Gulf Fritillary	275	6.71
Heliconius charithonia	Zebra Heliconian	9	0.22
Euptoieta claudia	Variegated Fritillary	8	0.20
Speyeria diana	Diana Fritillary	17	0.41
Speyeria cybele	Great Spangled Fritillary	15	0.37
Chlosyne nycteis	Silvery Checkerspot	135	3.29
Phyciodes phaon	Phaon Crescent	73	1.78
Phyciodes tharos	Pearl Crescent	446	10.88
Anthanassa texana	Texan Crescent	4	0.10

Junonia coenia	Buckeye	114	2.78
Polygonia interrogationis	Question Mark	28	0.68
Polygonia comma	Eastern Comma	6	0.15
Vanessa atalanta	Red Admiral	6	0.15
Vanessa cardui	Painted Lady	7	0.17
Vanessa virginiensis	American Lady	63	1.54
Limenitis arthemis astyanax	Red-spotted Purple	150	3.66
Limenitis archippus	Viceroy	7	0.17
Anaea andria	Goatweed Leafwing	10	0.24
Asterocampa celtis	Hackberry Emperor	59	1.44
Asterocampa clyton	Tawny Emperor	5	0.12
Enodia portlandia	Southern Pearly-eye	27	0.66
Enodia anthedon	Northern Pearly-eye	9	0.22
Enodia creola	Creole Pearly-eye	4	0.10
Satyrodes appalachia	Appalachian Brown	6	0.15
Cyllopsis gemma	Gemmed Satyr	28	0.68
Hermeuptychia sosybius	Carolina Satyr	546	13.31
Hermeuptychia intricata	Intricate Satyr	11	0.27
Neonympha areolatus	Georgia Satyr	4	0.10
Neonympha helicta	Helicta Satyr	1	0.02
Neonympha mitchellii	Mitchell's Satyr	16	0.39
Megisto cymela	Little Wood Satyr	135	3.29
Cercyonis pegala	Common Wood-Nymph	5	0.12
	Total	**4104**	**100.00**
	Total Species	**103**	

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

Mack sends in the following report from David Rupe:

Atlides halesus (male), collected on retaining wall in backyard on 15-Sept-2017 (Cove Creek Road south of Prairie Grove, washington, AR) (See photo on page 274.)

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

Charlie sends in the following report:

A list of moth species recorded at Paynes Prairie Preserve State Park, Alachua Co, FL, Sept. 22, 2017.

The bulk of this list was generated by James K. Adams. The 11 species new to the survey list are in boldface. Some name corrections were also provided by James. Any further additions? Thanks. Charlie

Participants: James Hayden, Brian Scholtens, James K. Adams, Debbie Matthews, Terry Lott, Eric Anderson, Jessica Awad, Peter Polshek, Laura Gaudette, Vijay Barve and his wife & friend, Lance Durden, Stuart Marcus, Mohammed Z. Ahmed, S. Bolton, David Plotkin, Bob Belmont, Charlie Covell.

0373 Acrolophus popeanella (Clemens)
0442 Cryptothelea gloverii (Packard)
0457 Thyridopteryx ephemeraeformis (Haworth) JKA
0953 Eupragia hospita Hodges
1019 Antaeotricha humilis (Zeller)
1024 Antaeotricha albulella (Walker)
1162 Blastobasis glandulella (Riley)
1228+ Pigritia sp.
1254+ Coleophora sp.
1422 Homaledra sabalella (Chambers) LD
1467 Euclemensia bassettella (Clemens)
1762 Aristotelia rubidella (Clemens)
1857 Pubitelphusa latifasciella (Chambers)
2707 Bactra verutana Zeller
2749 Eumarozia malachitana (Zeller)
2907 Strepsicrates smithiana (Walsingham)
3172 Epiblema strenuana (Walker)
3486 Cydia toreuta (Grote)
3494 Cydia latiferreana (Walsingham)

3495 Gymnosoma punctidiscanum (Dyar)
3731 Sparganothoides lentiginosana (Walsingham)
3741 Platynota semiustana (Walsingham)
3745 Platynota rostrana (Walker)
3747 Coelostathma discopunctana Clemens
3782 Carolella sartana (Hübner)
4642 **Megalopyge pyxidifera (J. E. Smith)** LD
4647 Megalopyge opercularis (J. E. Smith)
4657 Heterogenea shurtleffi Packard
4667 Apoda y-inversum (Packard)
4668 Apoda rectilinea (Grote & Robinson)
4671 Prolimacodes badius (Hübner)
4675 Isochaetes beutenmulleri (H. Edwards)
4677 Phobetron pithicium (J. E. Smith) LD
4681 Isa textula (Herrich-Schäffer)
4693 Monoleuca subdentosa Dyar
4697 Euclea delphinii (Boisduval)
4700 Acharia stimulea (Clemens)
4738 Eudonia strigalis (Dyar)
4740 Elophila nebulosalis (Fernald)
4745 Chrysendeton kimballi Lange
4748 Elophila icciusalis (Walker) LD
4751 Elophila gyralis (Hulst) LD, JEH
4754 Elophila tinealis (Munroe)
4755 Elophila obliteralis (Walker)
4870 Glaphyria sequistrialis Hübner LD
4890 Dicymolomia metalophota (Hampson) (Scholtens says correct to 4889 D. julianalis (Walker)
4947 Ostrinia obumbratalis (Lederer)
5117 Loxostegopsis merrickalis (Barnes & McDunnough)
5150 Samea ecclesialis Guenée
5151 Samea multiplicalis (Guenée)
5160 Desmia maculalis Westwood
5169 Hymenia perspectalis (Hübner)
5176 Anageshna primordialis (Dyar)
5177 Apogeshna stenialis (Guenée)
5182 Blepharomastix ranalis (Guenée)
5205 Diaphania modialis (Dyar)
5223 Palpita illibalis (Hübner)
5271 Bicilia iarchasalis (Walker)
5273 Herpetogramma fluctuosalis Lederer
5274 Herpetogramma phaeopteralis (Guenée)
5282 Cryptobotys zoilusalis (Walker) BS
5284 Syngamia florella (Stoll)
5301 Leptosteges flavicostella (Fernald)
5419 Microcrambus biguttellus (Forbes)
5420 Microcrambus elegens (Clemens)
5424 Microcrambus kimballi Klots BS
5431 Fissicrambus profanellus (Walker)
5450 Parapediasia decorella (Zincken)
5463 Argyria lacteella (Fabricius)
5466 Argyria critica (Forbes) JKA
5475 Diatraea saccharalis (Fabricius) JH
5478 Diatraea evanescens Dyar
5530 Hypsopygia binodulalis (Zeller)
5538 Parachma ochracealis Walker
5492 Eoreuma densella (Zeller)
5550 Lepidomys irrenosa Guenée
5563 Clydonopteron sacculana (Bosc)
5568 Arta olivalis Grote
5574 Heliades mulleolella (Hulst)
5579 Macalla zelleri (Grote)
5597 Pococera melanogrammos Zeller LD
5602 Pococera subcanalis (Walker)
5704 Anabasis ochrodesma (Zeller)
5606 Pococera asperatella (Clemens)
5734 Atheloca subrufella (Hulst)
5802 Sciota uvinella (Ragonot)
5803 Sciota celtidella Hulst
6005 Moodna ostrinella (Clemens)
6020 Ephestia kuehniella (Zeller) BS [this sp.? (need to dissect)]
6029 Varneria postremella Dyar
6037 Cabnia myronella Dyar
6067 Atacosa glareosella (Zeller)
6068 Homosassa ella (Hulst)
6226 Hellinsia unicolor (Barnes & McDunnough)
6314 Macaria varadaria (Walker) JKA
6326 Macaria aemulataria Walker
6336 Macaria distribuaria Hübner
6341 Macaria bicolorata (Fabricius)
6443 Glenoides texanaria (Hulst)
6570 Aethalura intertexta (Walker) LD 100
6580 Iridopsis pergracilis (Hulst)
6586 Iridopsis defectaria (Guenée)
6590 Anavitrinella pampinaria (Guenée)
6597 Ectropis crepuscularia (Denis & Schiffermüller)
6599 Epimecis hortaria (Fabricius)
6621 Melanolophia signataria (Walker)
6655 Hypagyrtis esther (Barnes)
6742 Xanthotype rufaria Swett [or sospeta (Drury)
6966 Eutrapela clemataria (J. E. Smith)
6974 Patalene olyzonaria puber (Grote & Robinson)
7031 Nemoria catachloa (Hulst)
7064 Synchlora cupedinaria (Grote) JKA
7105 Idaea scintillularia (Hulst)
7108 Idaea furciferata (Packard)
7114 Idaea demissaria (Hübner)
7120 Idaea violacearia (Walker)
7122 Idaea tacturata (Walker)
7132 Pleuroprucha insulsaria (Guenée)
7137 Cyclophora myrtaria (Guenée)
7149 Scopula lautaria (Hübner)
7160 Scopula timandrata (Walker)
7173 Leptostales pannaria (Guenée)
7181 Lophosis labeculata (Hulst)
7416 Costaconvexa centrostrigaria (Wollaston)
7659 Lacosoma chiridota Grote
7662 Cicinnis melsheimeri (Harris)
7666 Oceclostera indistincta (H. Edwards)
7674 Tolype notialis Franclemont
7683 Artace cribraria (Ljungh)

7715 Dryocampa rubicunda (Fabricius) JKA
7723.1 Anisota pellucida (J. E. Smith)
7746 Automeris io (Fabricius)
7757 Antheraea polyphemus (Cramer)
7758 Actias luna (Linnaeus)
7766 Callosamia securifera (Maassen)
7851 Enyo lugubris (Linnaeus)
7885 Darapsa myron (Cramer)
7920 Peridea angulosa (J. E. Smith)
7951 Symmerista albifrons (J. E. Smith)
7977 Heterocampa astarte Doubleday
7990 Heterocampa umbrata Walker
7998 Lochmaeus manteo Doubleday
8007 Schizura unicornis (J. E. Smith)
8012 Oligocentria semirufescens (Walker)
8026 Hyparpax perophoroides (Strecker)
8296 Dasychira basiflava (Packard)
8067 Cisthene plumbea Stretch
8068 Cisthene striata Ottolengui
8071 Cisthene subjecta Walker
8089 Hypoprepia miniata (Kirby
8090 Hypoprepia fucosa (Hübner)
8114 Virbia laeta (Guérin-Méneville)
8118.1 Virbia fergusoni Zaspel
8122 Virbia rubicundaria (Hübner)
8131 Estigmene acrea (Drury)
8134 Spilosoma congrua Walker
8137 Spilosoma virginica (Fabricius)
8140 Hyphantria cunea (Drury)
8169 Apantesis phalerata (Harris)
8203 Halisidota tessellaris (J. E. Smith)
8266 Dahana atripennis Grote CVC, JKA
8280 Cosmosoma myrodora Dyar
8322 Idia americalis (Guenée)
8323 Idia aemula Hübner
8326 Idia rotundalis (Walker)
8343 Zanclognatha minoralis J. B. Smith
8370 Bleptina caradrinalis Guenée
8371 Bleptina inferior Grote
8376 Hypenula cacuminalis (Walker)
8384.1 Renia flavipunctalis (Geyer)
8385 Renia fraternalis J. B. Smith LD
8393 Lascoria ambigualis Walker
8397 Palthis angulalis (Hübner)
8404.1 Rivula pusilla Möschler
8437 Ablemma brimleyana (Dyar)
8465 Plathypena scabra (Fabricius)
8467 Hemeroplanis scopulepes (Haworth)
8490 Pangrapta decoralis Hübner
8509 Arugisa lutea (Smith)
8514 Scolecocampa liburna (Guenée)
8551 Anomis illita Guenée JKA
8560 Diphthera festiva (Fabricius)
8573 Metallata absumens (Walker)
8574 Anticarsia gemmatalis Hübner
8579 Antiblemma concinnula (Walker)
8582 Ephyrodes cacata Guenée
8585.3 Epidromia rotundata Herrich-Schäffer (not syn. fergusoni Solis, acc. To JKA)
8587 Panopoda rufimargo (Hübner)
8588 Panopoda carneicosta Guenée
8589 Panopoda repanda (Walker)
8701 Zale confusa McDunnough JKA
8721 Allotria elonympha (Hübner)
8743 Mocis latipes (Guenée)
8744 Mocis marcida (Guenée)
8746 Mocis disseverens (Walker)
8749 Ptichodis vinculum (Guenée)
8890 Pseudoplusia includens (Walker)
8957 Paectes oculatrix (Guenée)
8962 Paectes abrostoloides (Guenée)
8973.1 Afrida ydatodes Dyar 200
8983 Meganola minuscula (Zeller)
9025 Oruza albocostaliata (Packard)
9033 Ozarbaa nebula Barnes & McDunnough
9044 Thioptera nigrofimbria (Guenée)
9080 Proroblemma testa Barnes & McDunnough
9200 Acronicta americana (Harris)
9225 Acronicta vinnula (Grote)
9227 Acronicta laetifica J. B. Smith
9254 Acronicta afflicta Grote
9255 Acronicta brumosa Guenée
9257 Acronicta impleta Walker
9285 Polygrammate hebraeicum Hübner
9297.2 Elaphria cyanympha Ferguson
9299 Eudryas unio (Hübner)
9619 Phosphila miselioides (Guenée)
9632 Callopistria granitosa (Guenée)
9636 Acherdoa ferraria Walker
9650 Athetis tarda (Guenée)
9669 Spodoptera ornithogalli (Guenée)
9681 Elaphria festivoides (Guenée)
9687 Gonodes liquida (Möschler)
9690 Condica videns (Guenée)
9699 Condica sutor (Guenée)
9819 Amolita obliqua J. B. Smith
10414 Lacinipolia implicata McDunnough JKA
10450 Leucania incognita Barnes & McDunnough
10663 Agrotis ypsilon (Hufnagel)
10911 Anicla infecta (Ochsenheimer)
11073.1 Heliocheilus lupatus (Grote)
11112 Schinia sorida Smith
11115 Schinia siren (Strecker)
11117 Schinia lynx (Guenée)
11140 Schinia saturata (Grote)
11149 Schinia trifascia Hübner

233 identified spp. for the night (plus 2 named to genus only).
16 additions to survey total (one of these needs confirmation).
Please send me any additions and/or corrections. Well done! Cheers Charlie!!!!

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/).

James sends in the following report:

I apologize for the entries for "Rocky Face" and "Taylor's Ridge" in the last report. These are places I collect with frequency (see below), but I failed to include any other location information with those names. The information is more complete in this report. The contributors include James Adams (JKA or no notation), Brian Scholtens (BS), John Hyatt (JH) and Lance Durden (LD). Others are indicated with their 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 2017 unless otherwise specified.

Rocky Face ridgeline, just W of Dalton at crest of Dug Gap Battle Rd., Whitfield Co.:

Aug. 26-27:

GEOMETRIDAE: *Idaea tacturata* (COUNTY; extension northward). **SPHINGIDAE**: *Paonias astylus*. **NOCTUIDAE**: *Stiria rugifrons* (5 specimens), *Heliocheilus lupatus, Schinia gracilenta, Schinia lynx, Properigea* nr. *costa* (10 specimens).

Sept. 8-9:

NOCTUIDAE: *Stiria rugifrons* (2 specimens), *Heliocheilus lupatus, Schinia grandimedia* (STATE), *Properigea* nr. *costa* (5 specimens); *Dichagyris grotei*.

Sept. 16-17:

SPHINGIDAE: *Sphinx kalmiae*. **EREBIDAE**: *Metallata absumens, Catocala robinsoni*. **NOCTUIDAE**: *Schinia grandimedia* (see comment directly above), *Mesapamea fractillinea*.

Oct. 4-5:

NOCTUIDAE: *Papaipema nebris, Lacinipolia teligera*.

Nov. 3-4:

EREBIDAE: *Catocala robinsoni* (LATE). **NOCTUIDAE**: *Epiglaea decliva*.

Carbondale, I-75 exit 326, Whitfield Co.:

NOTODONTIDAE: *Gluphisia septentrionis*, Aug. 28.

Taylor's Ridge 5 mi. W of Villanow, Walker Co.:

Oct. 19-20:

NOCTUIDAE: *Amyna bullula, "Platypolia" mactata* (COUNTY).

Nov. 24:

SATURNIIDAE: *Hemileuca maia*; abundant and rather late, most were a bit flight worn. None seen a week later on December 1, so still no December records for north Georgia.

Salacoa Rd. at Salacoa Creek, five miles ESE of Fairmount, Bartow Co.:

Aug. 19-20:

GEOMETRIDAE: *Cepphis decoloraria*. **NOCTUIDAE**: *Basilodes pepita, Schinia gracilenta, Mesapamea trigona*.

Sept. 3-4:

NOCTUIDAE: *Plagiomimicus pityochromus* (COUNTY), *Cirrhophanus triangulifer, Basilodes pepita, Papaipema polymniae*.

3.3 mi. N of hwy. loop 1 along hwys. 1/27, just to the east of the hwys., Rome, GA, Aug. 20:

EREBIDAE: *Catocala myristica* (7 specimens).

Statesboro, Bulloch Co., LD:

NOCTUIDAE: *Diastema tigris* (a few) Aug. 17-20.

3 mi. NE of Metter, Candler Co., Aug. 18, LD:

NOCTUIDAE: *Cucullia alfarata* (COUNTY).

Sapelo Island, McIntosh Co.:

July 27, JH:

TINEIDAE: *Scardia anatomella* (ISLAND). **CRAMIBDAE**: *Epicorsia oedipodalis* (ISLAND), *Pyrausta*

onythesalis. **NOCTUIDAE**: *Gabara distema.*

August 21, JH:

TORTRICIDAE: *Cenopis lamberti.* **SATURNIIDAE**: *Citheronia regalis* (ISLAND), *C. sepulcralis.*

October 12-14, JKA and LD:

CRAMBIDAE: *Lygropia tripunctata* (ISLAND). **EREBIDAE**: *Utetheisa bella, Dahana atripennis, Metallata absumens, Palpidia pallidior* (STATE, and numerous; grand total of 19), *Zale declarans* (LATE). **NOCTUIDAE**: *Amyna stricta, Condica claufacta, C. concisa, Schinia tuberculum, S. nubila, Schinia saturata, Capsula oblonga, Properigea tapeta, Lacinipolia explicata* (ISLAND), *Leucania pilipalpis* (STATE), *Feltia floridensis, Agrotis vetusta.*

Tugaloo River, Stephens Co., Aug. 26, 1017, Mike Chapman:
LASIOCAMPIDAE: *Heteropacha rileyana* (COUNTY).

31° 25.658' N, 81° 23.960' W, McIntosh Co., Doris Cohrs:

Nov. 28:

EREBIDAE: *Melipotis fasciolaris* (COUNTY).

Dec. 5:

SATURNIIDAE: *Citheronia regalis* (ridiculously LATE; very confused).

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

Gary Noel Ross sends in the following report:

Butterflies documented at the LSU AgCenter Hammond Research Station (Tangipahoa Parish), 21549 Old Covington Hwy, Hammond, LA., September 16, 2017, 9:00 AM-3:30 PM. One observer: Gary Noel Ross. All butterflies were in the formal gardens of the station. Weather: sunny (morning), partly cloudy to cloudy (afternoon); temperature between 75 and 90 degrees F.; relative humidity hovering around 65 percent; wind calm. [See "Pollination Celebration: A New Festival for Louisiana" by Gary Noel Ross, *Southern Lepidopterists' News*, December 31, 2016 (Vol. 38:4), pages 278-292 for description of site.] The 26 species are listed in descending order of abundance; the numeral "1" indicates only a single individual.

Cloudless Sulphur (*Phoebis sennae*)
Gulf Fritillary (*Agraulis vanillae*)
Pipe-vine Swallowtail (*Battus philenor*)
Long-tailed Skipper (*Urbanus proteus*)
Common Buckeye *(Junonia coenia*)
Monarch (*Danaus plexippus*)
Giant Swallowtail (*Papilio cresphontes*)
Painted Lady (*Vanessa cardui*)
Tiger Swallowtail (*Papilio glaucus*)
Horace's Duskywing (*Erynnis horatius*)
Spicebush Swallowtail (*Papilio troilus*)
Fiery Skipper (*Hylephilia phyleus*)
Common Checkered Skipper (*Pygrus communis*)
Ocola Skipper (*Panoquina ocola*)
Carolina Satyr (*Hermeuptychia sosybius*)
Whirlabout (*Polites vibex*)
Gray Hairstreak (*Satyrium melinus*)-1
Red-banded Hairstreak (*Calycopis cecrops*)-1
Orange Sulphur (*Colias eurytheme*)-1
Little Yellow (*Eurema lisa*)-1
Red Admiral (*Vanessa atalanta*)-1
Silver-spotted Skipper (*Epargyreus clarus*)-1
Little Yellow (*Eurema lisa*)-1
Pearl Crescent (*Phyciodes tharos*)-1
American Snout *(Libytheana carinenta*)-1
Little Glassywing (*Pompeius verna*)-1.

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

All records by Ricky Patterson unless otherwise indicated:

13 October 2017, Vicksburg, Warren county *Calpodes ethlius* emerged from pair of larva found on *Canna* leaves (**county record**)

7 November 2017, Vicksburg, Warren county *Calephelis virginiensis* (**county record**)

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 sends in the following report for North Carolina:

The following selected moth records were submitted to the Moths of North Carolina website (http://dpr.ncparks.gov/moths/index.php). In addition to the individual observations, a number of records were obtained from a Bioblitz conducted in New Hanover County. Individuals submitting records include: Amanda Auxier (AA), Brian Bockhahn (BB), B. Fleming (BF), C. Edwards (CE), Chris Helms (CH), Chris Jantzen (CJ), F. Williams (FW), Guy McGrane (GM), Hunter Phillips (HP), J. Brown (JB), J.B. Sullivan (JBS), Jane Wyche (JW), K. Bischof (KB), K. Futch (KF), Kyle Kittelberger (KK), L. Amos (LA), Mark Shields (MS), Paul Scharf (PS), Robert Gilson (RG), R. Newman (RN), S. Williams (SW), Salman Abdulali (SA), Steve Hall (SH), and Shane Knapp (SK). Disclaimer: the **STATE** designations represent additions to the state list that we maintain for our website, but does not exclude the possibility that the species have been previously collected in North Carolina; we still have a long way to go to check out all of the literature sources and visit all the institutional and private collections to rule out that possibility. If you know of any credible records that we have missed, please let us know.

NEPTICULIDAE:
Stigmella macrocarpae OCT 9, Wake, KB **(STATE)**

TINEIDAE:
Hybroma servulella SEP 30, New Hanover, KK/BB/PS
Mea bipunctella SEP 20, Wake, KB
Tinea apicimaculella SEP 21, Wake, KB

GRACILLARIIDAE:
Caloptilia violacella OCT 6, Wake, KB
Neurobathra strigifinitella SEP 20, Wake, KB
Phyllonorycter celtifoliella OCT 15, Wake, KB **(STATE)**
Cameraria ulmella SEP 20, Wake, KB **(STATE)**

AMPHISBATIDAE:
Machimia tentoriferella OCT 9, Wake, KB

OECOPHORIDAE:
Epicallima argenticinctella SEP 27, Stokes, BB
Promalactis suzukiella SEP 27, Pender, AA

COSMOPTERIGIDAE:
Cosmopterix pulchrimella SEP 30, New Hanover, KK/BB/PS **(STATE)**
Melanocinclis lineigera SEP 21, Wake, KB

GELECHIIDAE:
Taygete gallaegenitella OCT 22, Wake, KB **(STATE)**
Chionodes mediofuscella SEP 22, Wake, KB
Chionodes thoraceochrella SEP 27, Stokes, BB
Stegasta bosqueella SEP 21, Wake, KB
Untomia albistrigella OCT 5, Wake, KB **(STATE)**

Anacampsis conclusella SEP 27, Wake, KB; SEP 30, New Hanover, KK/BB/PS
Dichomeris ligulella SEP 27, Stokes, BB

CARPOSINIDAE:
Carposina sasakii SEP 19, Carteret, JBS **(STATE)**

SESIIDAE:
Pennisetia marginatum SEP 19, Gates, FW

TORTRICIDAE:
Bactra verutana SEP 30, New Hanover, KK/BB/PS
Phaneta raracana SEP 20, Wake, KB;
Pelochrista dorsisignatana OCT 15, Wake, KB
Corticivora parva SEP 30, New Hanover, KK/BB/PS
Argyrotaenia velutinana SEP 29, Wake, KK/PS
Argyrotaenia tabulana SEP 27, Stokes, BB
Clepsis peritana SEP 5, Pender, AA
Platynota flavedana OCT 15, Pender, AA
Platynota idaeusalis SEP 20, Wake, KB
Eugnosta sartana SEP 30, New Hanover, KK/BB/PS

CRAMBIDAE:
Elophila obliteralis OCT 8, Pender, AA
Parapoynx seminealis SEP 16, Richmond, RG
Achyra rantalis SEP 3, Pitt, SA
Uresiphita reversalis OCT 23, Pender, AA
Pyrausta subsequalis SEP 30, Mecklenburg, RG
Samea ecclesialis OCT 13, Wake, KB; NOV 5, Pender, AA
Hymenia perspectalis OCT 24, Orange, SH
Spoladea recurvalis OCT 15, Pender, AA; OCT 2, Pitt, SA; OCT 27, Carteret, SA
Anageshna primordialis AUG 29, Pender, AA
Diaphania hyalinata SEP 30, Pender, AA
Diaphania costata OCT 13, Pitt, SA; OCT 5, Wake, KB
Herpetogramma phaeopteralis OCT 31, Pender, AA **(STATE)**
Herpetogramma pertextalis SEP 13, Pender, AA
Pilocrocis ramentalis OCT 13, Wake, KB
Crambus praefectellus OCT 2, Pender, AA
Agriphila vulgivagellus OCT 23, Pender, AA; OCT 5, Wake, KB
Argyria critica SEP 24, Gates, JW; SEP 5, Gates, JW
Diatraea lisetta SEP 29, Pender, AA

PYRALIDAE:
Clydonopteron sacculana SEP 29, Wake, KK/PS
Dioryctria taedivorella OCT 7, Pender, AA; SEP 26, Pender, AA
Euzophera ostricolorella OCT 14, Orange, SH; OCT 9, Wake, KB

GEOMETRIDAE:
Speranza varadaria SEP 30, New Hanover, JBS /SPH
Iridopsis pergracilis OCT 21, Pitt, SA
Idaea ostentaria SEP 30, New Hanover, JBS /SPH
Idaea tacturata SEP 30, New Hanover, JBS /SPH
Xanthorhoe lacustrata SEP 30, New Hanover, JBS /SPH
Eupithecia peckorum SEP 30, New Hanover, JBS /SPH

SPHINGIDAE:
Sphinx gordius SEP 30, New Hanover, FW/SW
Eumorpha fasciatus SEP 15, Pitt, CJ
Xylophanes tersa OCT 24, Onslow, MS; SEP 19, New Hanover, CH/KF; SEP 29, Onslow, MS

NOTODONTIDAE:
Schizura concinna SEP 27, Pender, AA

EREBIDAE:
Utetheisa ornatrix OCT 15, Dare, JB; NOV 6, Pitt, SA
Virbia laeta SEP 16, Pender, AA
Renia fraternalis SEP 30, New Hanover, JBS /SPH
Arugisa latiorella SEP 30, New Hanover, JBS /SPH
Ascalapha odorata SEP 14, Rockingham, BB/KK
Mocis marcida SEP 30, New Hanover, JBS /SPH
Catocala vidua SEP 27, Stokes, BB
Catocala lacrymosa OCT 14, Orange, SH
Catocala nebulosa SEP 27, Stokes, BB
Catocala marmorata SEP 28, Wake, KB
Catocala carissima SEP 24, Duplin, MS

NOLIDAE:
Nola cereella SEP 30, New Hanover, JBS /SPH

NOCTUIDAE:
Argyrogramma verruca OCT 22, Wake, KB; SEP 30, New Hanover, JBS /SPH
Trichoplusia ni SEP 3, Pitt, SA
Panthea furcilla AUG 29, McDowell, KB; SEP 30, New Hanover, JBS /SPH
Eudryas unio SEP 4, Gates, JW
Callopistria floridensis SEP 29, Mecklenburg, RG
Spodoptera eridania NOV 5, Pender, AA; SEP 30, New Hanover, JBS /SPH
Elaphria nucicolora EP 30, New Hanover, JBS /SPH
Cirrhophanus triangulifer AUG 31, McDowell, KB
Basilodes pepita SEP 13, Rockingham, KK/BB
Sericaglaea signata OCT 24, Orange, SH
Anathix ralla SEP 27, Stokes, BB
Xestia elimata OCT 14, Orange, SH
Xestia dilucida OCT 24, Pender, AA
Schinia trifascia SEP 30, New Hanover, JBS /SPH

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Harry LeGrand sends in these fall butterfly records for North Carolina. Records are from September through November 2017, except as noted otherwise. Names in parentheses are counties.

Fall 2017 was a fairly exciting one along the southeastern coast, as four species of strays – *Heliconius charithonia, Hypolimnas misippus, Anartia jatrophae*, and *Pyrgus oileus* – were noted, and three were found at multiple sites. Though this flourish of stray sightings pales in comparison with the usual bonanza of strays seen in coastal South Carolina, our state often goes a few years without species seen less than ten times ever. And, though it was not a big season for *Pyrisitia lisa* or *Urbanus proteus*, at least they were seen on many occasions. The immigration of *Vanessa cardui* into the state was very memorable, with many dozens of records and a few counts of at least 30 individuals. Most observers found them every time they went afield in October, for example. *Panoquina ocola* was also found in much larger numbers than usual this season. Because the weather for the season averaged warmer and drier than usual, with the state dodging several major hurricanes, there were quite a few record late reports.

PIERIDAE:
Pontia protodice, only a few were noted this season, including several reports from Wake County at usual locations. Most notable was one seen by Mike Turner near the Tar River (Edgecombe) **(COUNTY)** on October 28. There have been very few reports in recent years from the Coastal Plain.

Pyrisitia lisa, this was an "off-year" for the species in the state, though there were a few dozen reports. Most reports were for the southern Coastal Plain, with only a handful from the Piedmont and the mountains.

LYCAENIDAE:

Parrhasius m-album, though not overly rare in fall, one seen on October 5 at Yates Mill County Park (Wake) by Bud Webster was significant in that the observer sadly passed away (at age 82) only a month later. The previous state late date of October 26 was surpassed by one photographed by Salman Abdulali on November 1 at the Pitt County Arboretum in Greenville.

NYMPHALIDAE:

Agraulis vanillae, a very good count was 150 seen by Harry LeGrand at Fort Fisher State Recreation Area (New Hanover) on October 6.

Heliconius charithonia, this stray was gratifyingly seen at several locations. A small flurry of records came from Emerald Isle (Carteret) between August 15 and September 30; Wanda Collins and Ed Crane provided photos for documentation. Mark Jones had one in his Wilmington (New Hanover) yard on October 16 and 20. Most unusual was one seen by Martha Girolami in her yard in Chatham County **(COUNTY)** in the eastern Piedmont; she noted it for three weeks in October and provided a photo for documentation.

Vanessa cardui, this was one of the best seasons for this migrant in recent memory, as most observers found them routinely on butterfly walks. Reports came from across the state, with many tallies in double digits. The best counts were 100 in the Sandhills Game Land (Richmond) on October 6, as seen by Will Stuart; and 42 along the Blue Ridge Parkway (Yancey) on October 5, as reported by Marilyn Westphal.

Hypolimnas misippus, the fourth state record was of a fresh male photographed by Mark Shields at the Coastal Carolina Community College gardens in Jacksonville (Onslow) **(COUNTY)** on October 17. Though there were a handful of strong hurricanes passing through the West Indies in weeks prior to the report, its freshness and occurrence at a garden suggest it could have eclosed from a foodplant at the garden.

Anartia jatrophae, there was a notable "outbreak" of this very rare stray along the southern coast, though reports were limited to two sites. Harry LeGrand photographed two at Fort Fisher (New Hanover) on October 6. Most significant was a population found by John Fussell at Theodore Roosevelt State Natural Area (Carteret). He first noted two on October 11, and over the next few weeks saw additional individuals, including a remarkable 12 on November 4. He observed them at stands of *Bacopa monnieri*, a known foodplant in Florida; and though he never saw females ovipositing, it became clear that the species was indeed gravitating to this semi-aquatic plant in wetland swales in the park.

Asterocampa clyton, Salman Abdulali observed a fairly late individual on October 13 at the Pitt County Arboretum in Greenville.

Cercyonis pegala, normally seen only in single digits in most downstate locales, a count of 24 seen by Alan Belden at Palmetto-Peartree Preserve (Tyrrell) on September 8 was noteworthy.

Danaus gilippus, again this season the only reports came from its only regular breeding locale, at Fort Fisher (New Hanover). Dorothy Pugh saw one on September 27, and Ed Corey noted three on October 12.

HESPERIIDAE:

Urbanus proteus, the northbound flight into the state was about average in Fall 2017, though it was mostly limited to the southern half of the state, with only a very few records for the northern Piedmont and mountains.

Thorybes pylades, until this season the previous late date for North Carolina was September 22. However, single individuals were photographed, both on October 5, in Hillsborough (Orange) by John Jarvis and at Weymouth Woods Sandhills Nature Preserve (Moore) by Rick Cheilante. In fact, the species is rarely seen after August, and thus the photographs were necessary to document these notable records.

Erynnis baptisiae, until this season, there were no state records for the northern 2/3rds of the Coastal Plain, not due to lack of coverage but to a scarcity of suitable habitat. Thankfully, Salman Abdulali photographed one in Greenville (Pitt) **(COUNTY)** on September 25, and Alan Belden saw another farther north at Palmetto-Peartree Preserve (Tyrrell) **(COUNTY)** on September 8.

Pyrgus oileus, this very rare stray was found twice, both in New Hanover County. Harry LeGrand observed a male at Fort Fisher on October 6, and Hunter Phillips photographed another at the UNC-Wilmington campus on October 18. These represent only the fourth and fifth state records.

Copaeodes minima, slightly out of range, where certainly a migrant, was one noted by Will Cook near Jordan Lake (Chatham) on September 17. However, a few other Piedmont observations were made in Union and Mecklenburg counties; the species is probably a scarce resident in these counties, which lie along the South Carolina state line.

Problema byssus, Mike Turner saw three at Carvers Creek State Park (Cumberland) on September 3. This county lies near the northern edge of the range.

Poanes yehl, a small resident population was discovered a few years ago in the low mountains in Madison County, and Harry LeGrand confirmed that the population still survives, as he saw a female there on September 24.

Poanes viator, Harry LeGrand saw one on September 4 at Yates Mill County Park (Wake); this park has a small population, near the inner edge of the state's range.

Euphyes pilatka, though the species can be locally quite numerous, a tally of ten made by Nick Flanders on September 21 was at a site – North River Game Land (Currituck) – quite distant from previously known locations.

Euphyes berryi, Alan Belden again found the species at a known site in Pocosin Lakes National Wildlife Refuge (Washington), on September 7.

Lerodea eufala, though no one reported any double-digit totals, the species was gratifyingly reported from scattered sites all across the Piedmont, where scarce and is either a "winter-stressed" resident or a short-distance migrant.

Oligoria maculata, at the northern edge of the species' range was one seen by Alan Belden at Palmetto-Peartree Preserve (Tyrrell) on September 8.

Calpodes ethlius, Salman Abdulali reported the only adult individual for the season – one at the Pitt County Arboretum in Greenville on September 30.

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

Brian sends in the following report:

HESPERIIDAE:

Urbanus proteus - Indian Land, Lancaster Co., SC – 25 Sep 2016 – Carolyn Seaton – **County record**
Hesperia meskei - Carolina Sandhills NWR, Chesterfield Co., SC – 14 Oct 2017 – Dave Kastner and Marty Kastner
Hesperia meskei - Carolina Sandhills NWR, Chesterfield Co., SC – 17 Oct 2017 – Dennis Forsythe

PIERIDAE:

Eurema daira - James Webb Preserve, Hampton Co., SC. – 22 Sep 2017 – Richard Stickney
Eurema daira - Port Royal Island, Spanish Moss Trail, – 27 Oct 2017 – Steve Mix (First confirmed Beaufort Co. record since 1932.)

LYCAENIDAE:

Leptotes cassius - Edisto Island, Charleston Co., SC. – 30 Aug 2017 – Dennis Forsythe and Tom Austin
Leptotes cassius - Sullivan's Island, Ft. Moultrie, Charleston Co., SC. 11 Oct 2017 – Dennis Forsythe
Leptotes cassius - Summerville, Dorchester Co., SC..– 9 & 13 Oct 2017 - Marcie Daniels – **County record**
Leptotes cassius - Holy Cross Cemetery, James Is., Charleston Co., SC. 15 Oct 2017 – Dennis Forsythe

NYMPHALIDAE:

Heliconius charithonius - Wee Tee State Forest, Williamsburg County, SC, - 23 Aug 2017 – Dennis Forsythe, Tom Austin, Salley Dupree and Dave and Marty Kastner
Heliconius charithonius - Simpsonville, Co., Greenville, SC. – 6 Oct 2017 – Ginger Kopka

Heliconius charithonius - Summerville, Dorchester Co., SC. – Oct 2017 - Marcie Daniels – **County record**
Heliconius charithonius - Roxbury Park in Hollywood, Charleston Co., SC – 15 Oct 2017 - Alison Smith, Tom Austin, Dave Kastner and Marty Kastner
Anartia jatrophae - Botany Bay Plantation WMA, Charleston Co., SC. – 31 Aug 2017 – Tom Austin and Dennis Forsythe
Anartia jatrophae – Sullivan's Island, Ft. Moultrie, Charleston Co., SC. – 17 Sep 2017 - Nathan Dias and John Cox
Anartia jatrophae – Folly Island, Sandbar and W. Indian Sts, Charleston Co., SC – 16 Oct 2017 – Dennis Forsythe
Anthanassa texana seminole - Crackerneck WMA, Aiken Co., SC. – 9 Sep 2017 – Lois Stacey and John Demko
Vanessa cardui – Inman, Spartanburg Co., SC. – all through Sep 2017 – Doug Allen – **County record**
Vanessa cardui – Lowe's, James Island, Charleston Co., SC. – 23 Sep 2017 – Dennis Forsythe
Vanessa cardui – North Augusta, Aiken Co., SC – 6 Oct 2017 – Lois Stacey
Hermeuptychia intricata - Wee Tee State Forest, Williamsburg County, SC, - 23 Aug 2017 – Dennis Forsythe, Tom Austin, Salley Dupree and Dave and Marty Kastner – **County record**
Hermeuptychia intricata - Roxbury Park in Hollywood, Charleston Co., SC – 15 Oct 2017 - Alison Smith, Tom Austin, Dave Kastner and Marty Kastner
Eurema daira - Port Royal Island, Spanish Moss Trail, 27 Oct 2017, Steve Mix. This is the first confirmed Beaufort Co. record since 1932.

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

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

Monica Krancevic submits the following report for August 12-November 10
Lake Jackson, Brazoria County, TX Private Residence (29.04N, 95.42W)

Where were the moths and skippers?! This summer/autumn has been a disappointment, both in total numbers and species seen.

All observations are posted at: http://www.inaturalist.org/observations/krancmm

NEW AT LOCATION

Family	Species	Dates	Comments
Crambidae	*Palpita flegia*	30-Aug	
Crambidae	*Psara obscuralis*	23-Sep	
Crambidae	*Sericoplaga externalis*	23-Sep	
Erebidae	*Cosmosoma myrodora*	09-Oct	
Erebidae	*Eubolina impartialis*	27-Aug	
Erebidae	*Ledaea perditalis*	24-Aug	
Erebidae	*Mocis cubana*	07-Oct	ID:ECK Tentative
Erebidae	*Orgyia leucostigma*	31-Oct	
Gelechiidae	*Stegasta bosqueella*	01-Oct	
Geometridae	*Idaea scintillularia*	18-Aug	
Geometridae	*Scopula aemulata*	05-Oct	
Hesperiidae	*Heliopetes macaira*	18-Aug	
Noctuidae	*Cydosia aurivitta*	11-Aug	
Noctuidae	*Schinia nubila*	01-Oct	ID:ECK; very bright colors
Noctuidae	*Tripudia flavofasciata*	08-Nov	
Psychidae	*Thyridopteryx ephemeraeformis*	19-Sep	
Pyralidae	*Chararica hystriculella*	27-Aug	
Pyralidae	*Ephestia kuehniella*	17-Oct	
Tortricidae	*Bactra priapeia*	06-Nov	
Tortricidae	*Choristoneura obsoletana*	30-Aug	
Tortricidae	*Olethreutes furfuranum*	13-Aug	

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Stuart Marcus sends this report for August 11 - November 10
Trinity National Wildlife Refuge, Liberty, Liberty County, TX (30.097N, 94.765W)

New species added to the Refuge between these dates

COUNTY RECORDS

Family	Species	Dates	Comments
Carposinidae	*Carposina sasakii*	19-Sep	
Cosmopterigidae	*Limnaecia phragmitella*	12-Oct	
Crambidae	*Crocidocnemis pellucidalis*	05-Sep	
Crambidae	*Elophila nebulosalis*	28-Sep	
Crambidae	*Ommatospila narcaeusalis*	04-Oct	
Noctuidae	*Spodoptera dolichos*	27-Oct	
Pterophoridae	*Stenoptilodes brevipennis*	01-Jul	Specimen ID: D. Matthews
Schreckensteiniidae	*Schreckensteinia erythriella*	07-Sep	
Tineidae	*Tiquadra inscitella*	18-Sep	
Tortricidae	*[Atroposia] oenotherana*	06-Oct	
Tortricidae	*Ecdytolopha insiticiana*	12-Aug-16	IDed 08/2017
Tortricidae	*Eucosma grindeliana*	18-Aug	

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Mike Rickard sends in a new State record: *Gonodes liquida* (Moschler, 1886), Texas State record, November 5, 2017, Mission, Texas. Previously recorded only from southern Florida. (See photo on page 352).

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

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SOUTHERN LEPIDOPTERISTS' SOCIETY
c/o J. BARRY LOMBARDINI, THE EDITOR
3507 41st Street
Lubbock, Texas 79413