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J. BARRY LOMBARDINI: EDITOR

REPORT ON THE SPRING 2016 FIELD TRIP

BY

JOHN F. DOUGLASS

Twenty nature-lovers, from localities as distant as Indiana, Wisconsin, and Tennessee, enjoyed a weekend trip to selected habitats along the Florida-Alabama border on April 29-May 2. A gallery of photos from the trip follows.

Fig. 1. Litte Beggar Moth (*Eubaphe meridiana*).

Participants were: from **Florida**, Sally Cooey and Leland Leonard (FNPS, Pensacola), James R. Burkhalter (UWF, Pensacola), Bill and Marcia Boothe (Natural Encounters, SLS, & NABA, Bristol), Mary Ann Friedman (Niceville), Hugo L. Kons, Jr. (Gainesville), Jeffrey R. Slotten (Gainesville), Deborah L. Matthews, Terry A. Lott, and Annie Lott (Gainesville); from **Alabama**, Paulette H. Ogard (Birmingham) and Barry McPhail (Bayside Academy, Daphne); from **Georgia**, Lance A. Durden (GSU, Statesboro); from **Tennessee**, Carol and Herb Wolf (Woodbury); from the **Midwest**, Robert J. Borth (Mequon, WI), Jim and Suzanne Vargo (Mishawaka, IN), and John Douglass (Toledo, OH).

We received a warm welcome, and valuable advice on localities to visit, from the local naturalists on our trip. Among our valued new acquaintances are members of the Longleaf Pine Chapter of FNPS (the Florida Native Plant Society) and the Hairstreak Chapter of NABA.

Fig. 2. Painted Lichen Moth (*Hypoprepia fucosa*).

Each night, MV- and black - lighting for moths was carried out at the Nature Conservancy's Splinter Hill and Perdido River preserves. Scientific results of this work will be reported in

articles by H. Kons and R. Borth *et al.* in coming issues of the NEWS. Debbie Matthews and Bill Boothe produced beautiful photographic galleries of *Drosera* and *Sarracenia* species at the Splinter Hill site.

Fig. 3. Flower of Tracy's Dew-thread (*Drosera tracyi*).

We were especially fortunate that the 'Lewis and Clark' of North Florida lepidopterology, Hugo Kons and Bob Borth, were able to participate on the trip. Their monumental 2006 treatise on the moth fauna of North Florida, based on 10 years of rigorous sampling at multiple localities, is an indispensable starting-point for anyone engaged in study of the region's Lepidoptera, and it provided the foundation for our weekend's work.

We benefited enormously, too, from the company of one of the South's most - respected botanists, James R. Burkhalter of UWF (Pensacola). During a 45-year period, Jim has invested world-class care in building the UWF herbarium into a marvelously-comprehensive regional resource. His knowledge of Florida's plant life is encyclopedic, and he cheerfully provided the help we sought in characterizing lepidopteran habitats.

We sincerely thank the land managers who welcomed our group's activities: Brent Shaver of The Nature Conservancy (Mobile) and Tyler Macmillan of the Northwest Florida Water Management District.

Please mark your 2017 calendars now and plan to join us for a wonderful weekend field trip to the Upper Chipola River and its stunningly-beautiful natural features in the vicinity of Marianna, FL, on April 28 - May 1, 2017 (new moon is April 26). The Chipola River is fed by more freshwater springs (60+) than any other river in Northwest Florida (**Fig. 32**). The river valley is famous, too, as the site of one of history's last reported sightings of the Ivory-billed Woodpecker. See you then!

Photo credits: Figs. 1,5,6,9,18,21,23,25,28-30, Bill and Marcia Boothe [© Bill Boothe/Natural Encounters/ NatureInFocus.com]; **2-4,8,10-14,17,19,20,26,27,31**, Debbie Matthews; **7,15,16,** Jim and Suzanne Vargo; **22**, Jeff Slotten; **24,** Carol Wolf; **32,** Dave C. Hawkfish.

Fig. 4. Flower and leaves of *Drosera tracyi*.

Fig. 5. Glandular leaf of *Drosera tracyi* with trapped flies.

Fig. 6. White-top Pitcher Plants (*Sarracenia leucophylla*).

Fig. 7. Flowers of *Sarracenia leucophylla*.

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A RARE CAPTURE OF THE MOTH *PHOTEDES ENERVATA* (GUENÉE, 1852) (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

Fig. 1. ***Photedes enervata***, female captured May 6, 2009, 4.2 mi. NE of Abita Springs, Louisiana.

I have run a series of ultraviolet light traps nightly and continuously at the *Abita entomological study site for the past 33 consecutive years regardless of weather conditions or rain or extremes of temperatures. Despite this herculean light trapping effort, this lone fresh specimen (Fig. 1) is the only record of ***Photedes enervata*** (Guenée) I have captured in the state of Louisiana. It was taken in a uv light trap. This is one of dozens of species of moths that similarly exist as single records in my half century long collection of Louisiana lepidoptera.

Photedes enervata was originally described as ***Hypocoena enervata*** (Guenée, 1852). In the interim, it has been placed in two other genera, ***Nonagria*** *and* ***Chortodes.***

Forbes (1954) stated "***enervata*** is definitely known only from the south, but occassional large dull specimens found as far north as Massachusettes are possibly a race of it." Covell (1984) did not include this species in his publication. Heppner listed the range for ***enervata*** to include North Carolina to Florida to Mississippi and Louisiana, and flying in the month of April.

More recently, Lafontaine and Schmidt (2010) provided a synopsis of some of the multiple and recent taxonomical changes concerning this species and several closely related species of moths to different genera (contributed by Eric L. Quinter). What is apparent is that this species occurs very closely in, and along coastal wetlands communities. It has been reported that this species feeds upon smooth cordgrass ***Spartina alterniflora*** which would explain its occurrance in coastal and near-coastal locations. There are also scattered inland wetlands records for what may be ***enervata*** around the Great Lakes.

I might add that this Louisiana specimen was captured in an area of primarily longleaf pine and oak forest, at an elevation of 65', and not in a coastal habitat of Spartina marsh grass. Secondly, I have collected directly in coastal areas completely surrounded by thousands of acres of ***Spartina alterniflora*** in all directions, hundreds of time over the past 40 years, all along the entire coast of Louisiana, and have never encountered ***enervata*** there.

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

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ON THE COAST OF SOMEWHERE BEAUTIFUL

BY

CRAIG W. MARKS

It would be presumptuous of me to believe that anyone would remember an article I wrote about a trip to Puerto Rico in January of 2011 (Vol. 33, No. 2, pp 46-48). Within that article I explained that occasionally my job required I travel to the Caribbean. Specifically, the company for which I work is a member of a captive insurance program, organized under Cayman Island law. To remain in compliance with applicable tax laws, Board Meetings must be held outside of the U.S., and as such, each January the Captive Board (of which I am a member) meets somewhere in the Caribbean.

At the end of the afore-mentioned article, I mentioned that I was already looking forward to the next year's trip to Aruba. Well, it turned out that Aruba is a relatively flat island with a dry, almost desert-like climate. I only saw 9 species of butterflies, most of which were at the resort, a beautifully landscaped facility, and most as singles. The next year was on St. John in the U.S. Virgin Islands. In significant contrast to Aruba, St. John is a lush and extremely mountainous island. Despite that, I only saw 10 species, again, most at the resort (the Westin) and most as singles. Because the Captive was organized under Cayman law, every four years the Board is required to meet in the Caymans. So, in January 2014, I was back on Grand Cayman where I saw many more butterflies than the two previous years combined (23 species), but having been there before, nothing I had not previously seen.

I did not venture into the Caribbean in 2015. The Board Meeting was set for Curacao, but bad weather prevented me from making a connecting flight through Miami. Rather than show up late, I cancelled. The Westin Dawn Beach on St. Marten was the site for 2016's meeting. The island is unique in that it is actually divided between two countries with the southern portion a member of the Netherlands Kingdom (Sint Maarten) and the northern portion a French colony (Saint-Martin). Hispanola is the other Caribbean island split between two countries, Haiti and the Dominican Republic. St. Martin is located in the northern Lesser Antilles (a/k/a the Leeward Islands), southeast of the Virgin Islands. Other nearby islands include Anguilla, St. Barths, St Kitts and Nevis.

St. Martin is not a big island, 87 square kilometers, but it is heavily populated, possessing about 75,000 residents. While there, I was told it was the most densely populated Caribbean island on a per kilometer basis. It is mountainous like St. John with a combination of mangrove wetlands, thorny scrub and broadleaf forest. It has a lot of roads, almost all of which were narrow and winding. The locals were all extremely pleasant and helpful.

Fig. 1. St. Maarten 2016

The Westin resort is on the south, Dutch side of the island. Before making the trip, I did some online research and discovered a local, Mark Yokoyamo, who had posted both pictures and comments about the island's butterfly (and other) fauna. He also has written a book about the fauna of St. Maarten, including butterflies. He reported 35 species on the island, a couple of which appeared to me to be escapees from a local butterfly farm. I reached out to him by e-mail for suggested sites to visit, and, to my absolute surprise and pleasure, he offered to take me to a few locations. We made plans to meet on Monday, 1/24. He also suggested some spots close to the resort I could visit.

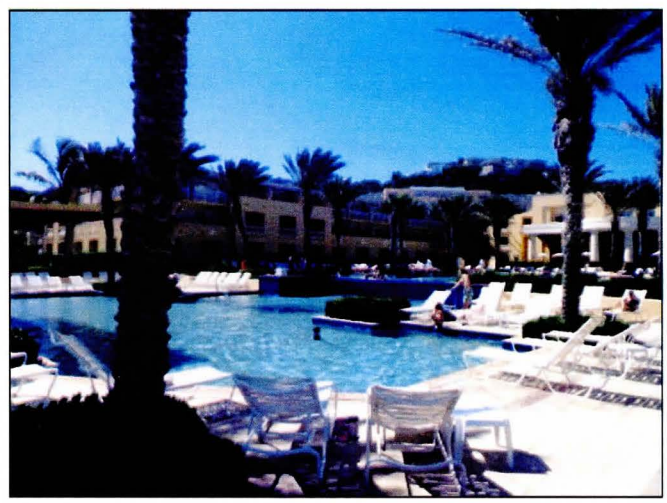

Fig. 2. Westin Dawn Resort

The area around the resort is more of a scrub habitat, but full of life. One spot was a small lagoon were I found several Lesser Antillean Iguanas and Common Gallinules (see below). The trees were full of Bananaquits and four Antillean Crested Hummingbirds were feeding on Ixora that bordered the property. My first day in the field, near the resort, yielded 16 species,

Fig. 3. Westin Dawn Resort

Fig. 4. Antillean Iguana (male)

Fig. 5. Common Gallinule (male)

the highlights of which were Lime Swallowtails, Miami Blues (the subspecies in this regions is commonly referred to as Thomas' Blue), Hairy Duskywings, and Purple-washed Skippers (a/k/a Sugarcane Skippers in this region). The male Hairy Duskywings are extremely dark, and when seen in the full sun, present a bluish/purple sheen. The females somewhat resemble Juvenal's Duskywings.

While doing my pre-trip research, I had been surprised to learn that Lime Swallowtails had been recorded on St. Maarten. I was aware that in the past ten years, this Asian swallowtail had been recorded in the Greater Antilles (Dominican Republic, Jamaica and Puerto Rico), but did not realize it had also been found south in the Lesser Antilles. Further research indicated it was reported from St. Eustatius as well as St. Maarten.

I saw two Lime Swallowtails at the Westin, two on Pic Paradis, and then four at Hotel L'Esplanada, a location on the French side of the island where Mark indicated they had been regularly seen. The attraction for these swallowtails at that hotel (as well as at the Westin) was a small-leaved shrub which Mark referred to as Mutton lemon (*Triphasia trifolia*) an introduced shrub found in the Lesser Antilles. Looking more like a hedge than a citrus tree, Mutton lemon is not easily recognized as a member of the citrus family, but the shrub produces small, oblong berries that, when crushed, produced a pungent, lemon-like odor. While discussing this swallowtails presence on the island, Mark wondered if they might have had their genesis in the region as escapees from one or more of the butterfly exhibits that have sprung up in the Caribbean and then proliferated in the mild climate with a readily available larval food source.

Fig. 6. Hairy Duskywing (female)

Mark had also reported, online and in his book that one of the more recent butterflies he had found on the island were Zestos Skippers (*Epargyreus zestos*), a species which I had not previously seen. Accordingly, the first location we visited was Pic Paradis, the highest point on the island (424m), where he had previously seen that skipper. The peak is shown in the picture on the next page (Fig. 11) at the radio/telephone antenna to the far left. That is Mark walking through a lush valley below the peak. The second picture (Fig. 12) is a view from the top (that antenna was behind me as I took this picture), looking north. The habitat is lush, filled with broad-leafed trees and flowers.

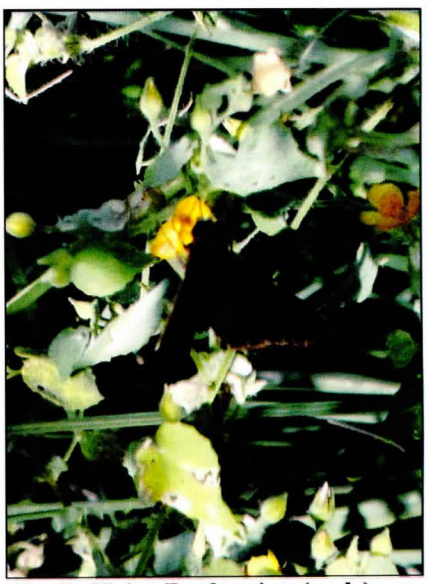

Fig. 7. Hairy Duskywing (male)

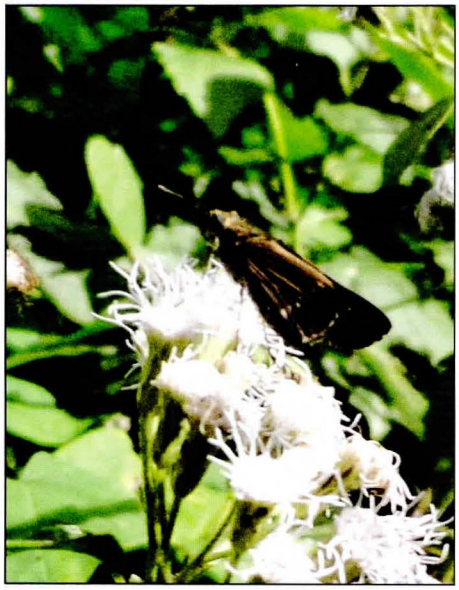

Fig. 8. Purple-washed Skipper

Fig. 9. Lime Swallowtail (adult male)

Fig. 10. Lime Swallowtail (caterpillar)

The walk up was steep at times, along a very narrow and rough dirt road that led to the antenna. Along the road, numerous varieties of flowers were blooming, including multiple stands of a tall bushy weed with multiple small white flowers. These stands were swarming with Hammock Skippers. I have seen Hammocks before on Key Largo and St. John, but always in small numbers. This skipper has a distinct habit of resting on the underside of leaves, out of sight, only to fly out when disturbed. On Pic Paradis, the Hammocks numbered in the hundreds, flying everywhere. Every stand of flowers had multiple Hammock Skippers feeding. My closest experience with this level of abundance has been with Snout Butterflies (*Libytheana carinenta*) at Thistlewaite WMA which, at times, can be present in very large numbers, filling the trees and air.

Other butterflies feeding at Pic Paradis' stands of small white flowers were Hall's Sulphurs, Florida Whites, Great Southern Whites, Bubastos Hairstreaks, and Long-tailed Skippers. Hall's Sulphurs resemble Dina Sulphurs, and at one time were considered a subspecies. There were numerous Monarchs feeding at blooming Pride of Barbados. According to Mark, they use Apple of Sodom (*Calotropis procera*) as their larval food plant, a tall flowering African plant introduced into the West Indies and whose sap contains toxins similar to milkweeds. At one point, a huge Black Witch (*Ascalapha odorata*) moth flew out into the road in front of us. Just before we left the area, I saw what I believe was a Brazilian Skipper (*Calpodes ethius*). I have raised them here in Louisiana so I am familiar with this skipper. It was feeding at some yellow flowers near where Mark had identified its larval food plant used on the island (a species of *Canna*). I could not get close enough to make a positive id.

Fig. 11. Pic Paradis on the extreme left

Fig. 12. View from Pic Paradis

We moved from Pic Paradis to the Hotel L'Esplanada. As indicated previously, Mark had consistently seen Lime Swallowtails there at a hedge of Mutton lemon. He also had reported seeing a male Mimic (*Hypolimnus misippus*), there in December. It was at this location that Mark pointed out three swallowtail caterpillars, all in an early instar stage and resembling bird droppings. We did not see any Mimics, but across the street from the hotel, at a pond historically used to harvest salt, Mark pointed

out two Bronze Hairstreaks. Reported as common in the Lesser Antilles, these hairstreaks bear a close resemblance to Fulvous Hairsteaks (*Electostrymon angelia*), found in south Florida, the Florida Keys and the Greater Antilles.

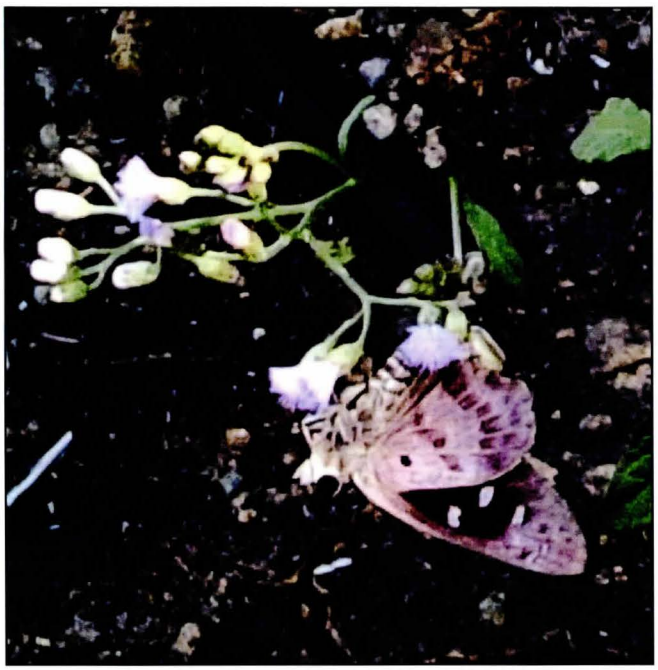

Fig. 13. Hammock Skipper

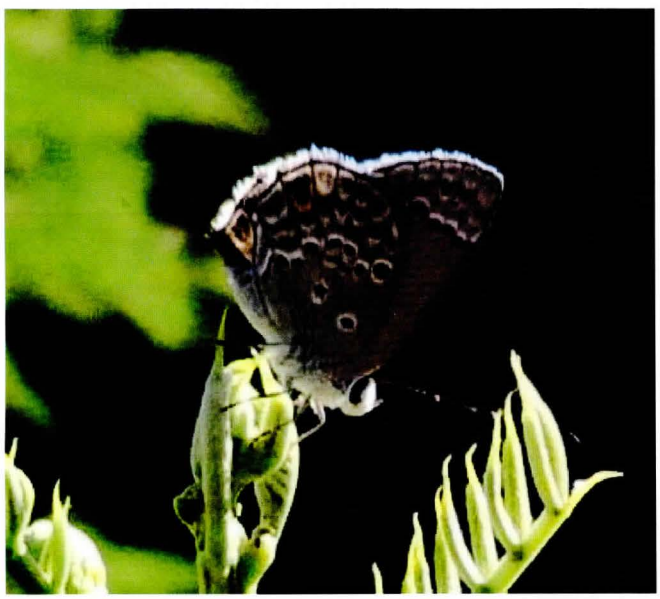

Fig. 14. Bubastos Hairstreak

I ended up seeing 21 species over three days, including three "lifers." My trip list is as follows (C = Common, A = Abundant, VA = Very Adundant):

Checkered or Lime Swallowtail, *Papilio demoleus*, (1/24 & 25) at Westin Resort (2 on 24th), Pic Paradis (2 on 25th) and Hotel L'Esplanada (4 on 25th),"lifer";
Cloudless Sulphur, *Phoebis sennae*, (1/24, 25 & 26) C;
Little Yellow, *Eurema lisa*, (all 3 days) C (at Westin);
Hall's Sulphur , *E. leuce*, (1/25 on Pic Paradis) A, "lifer";
Great Southern White, *Ascia monuste*, (all 3 days) VA;
Florida White, *Appias drusilla*, (1/25 on Pic Paradis) beween 5-10;
Bubastos Hairstreak, *Strymon bubastos*, (all 3 days) 1, 2 & 2, respectively;
Bronze Hairstreak, *S. angerona*, (1/25 at pond) 2 "lifer";
Thomas' Blue, *Cyclargus thomasi*, (1/24) 1 at Westin;
Cassius Blue, *Leptotes cassius*, (1/24) 2 at Westin;
Ceranus Blue, *Hemiargus hanno*, (1/26) C at Westin;
Gulf Fritillary, *Agraulus vanillae*, (1/24) 3 at Westin;
Tropical Buckeye, *Junonia genoveva*, (all 3 days) C at Westin;
White Peacock, *Anartia jatrophae*, (1/24 & 26) 4 & 3 respectively;
Monarch, *Danaus plexippus*, (1/24 & 25) C;
Hairy (Caribbean) Duskywing, *Ephyriades arcus*, (all 3 days) 8, 1 & 7 respectively;
Long-tailed Skipper, *Urbanus proteus*, (all 3 days) C;
Hammock Skipper, *Polygonus leo*, (1/24 & 25) VA on Pic Paradis;
Tropical Checkered-skipper, *Pyrgus oileus*, (1/25 at Pic Paradis) 1;
V-mark Skipper, *Choranthus vitellius*, (all 3 days) C;
Purple-washed Skipper, *Panoquina sylvicola*, (all 3 days) C.

This was a fun trip in all respects. As I have now been a board member for several years, I have meet and made numerous new friends. At the gate in the Atlanta airport for the flight to St. Martin, I found many of those friends were on the same flight as I, and we ended up bonding for the rest of the trip, all the way back to Atlanta. The resort was beautiful, the food was "to die for," and the company was always entertaining. I must again thank Mark for his hospitality and help.

The Good Lord willing, I will be heading to Barbados in January, 2017. I've already started my research and learned that island is part of the Windward Islands of the southern Lesser Antilles. It is the furthest east of any island in the Caribbean, and has a smaller list of butterfly residents as a result thereof (the prevailing winds blow east to west). On the plus side, the majority of those resident butterflies have migrated from the south (South America) so my hope is to see something unique like an Orion, *Historis odius*.

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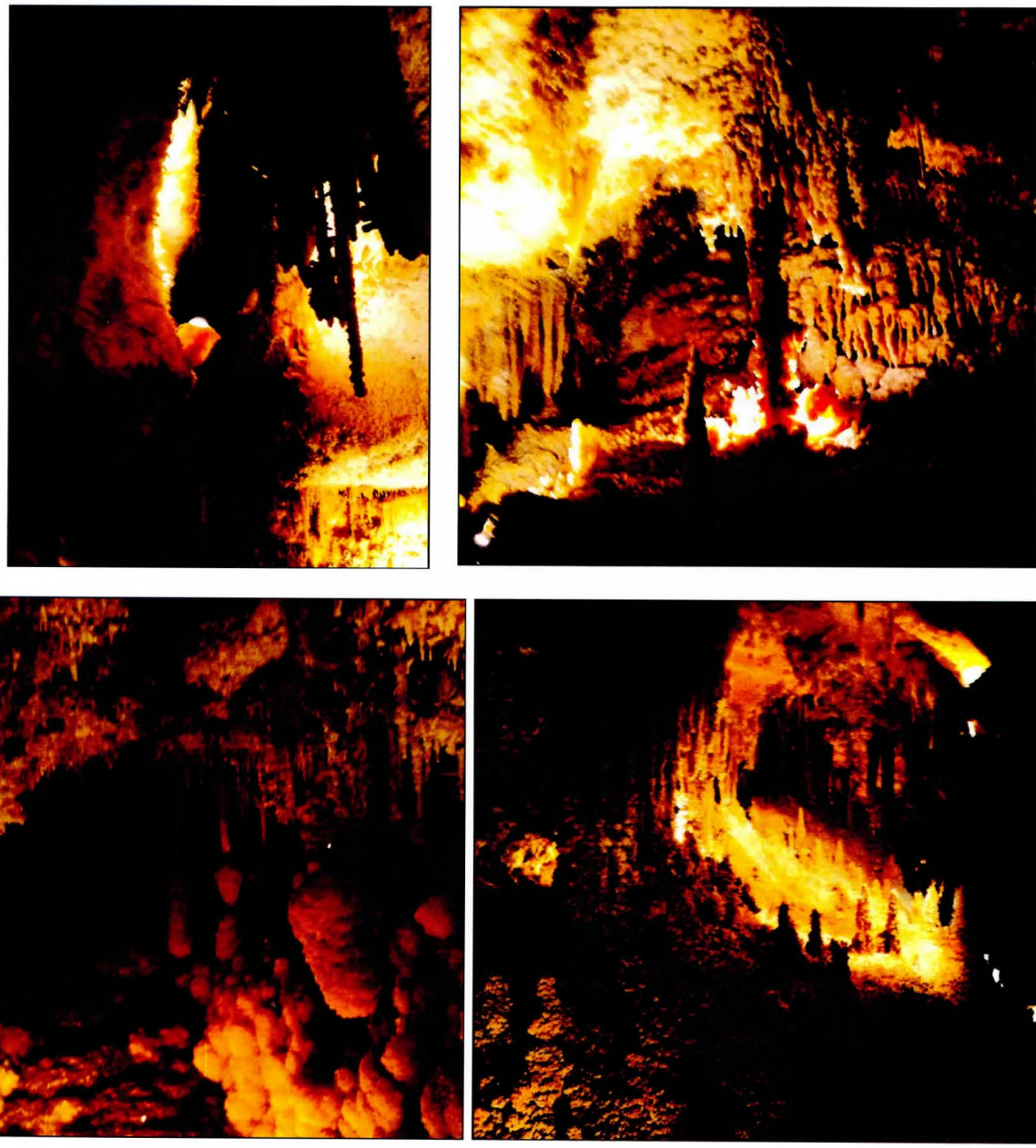
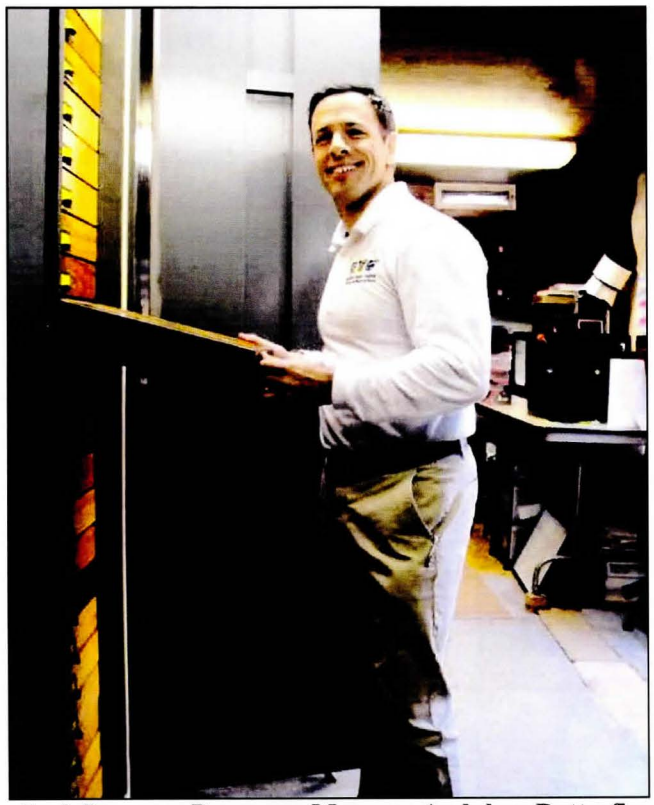


Sonora Caverns, Sonora, Texas - March 16, 2016

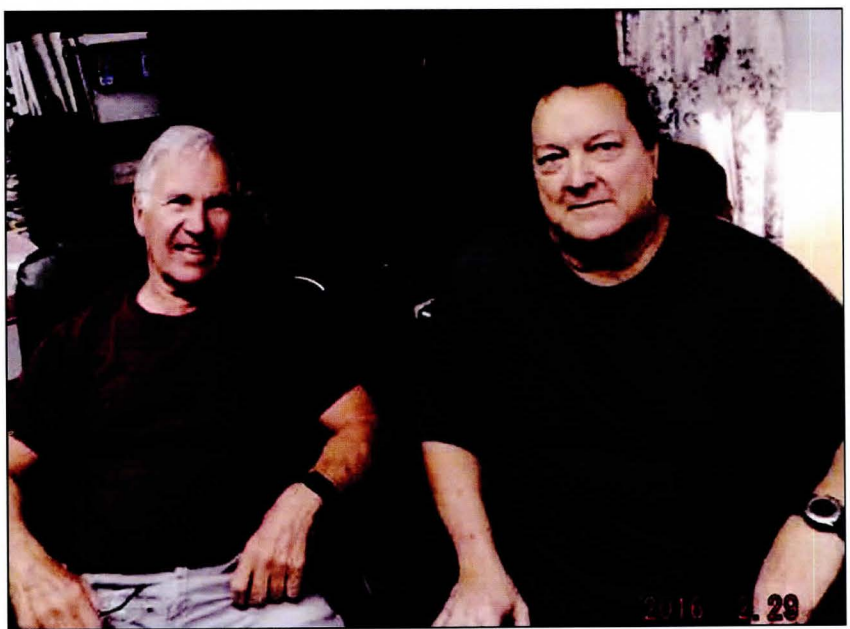
VISITORS TO VERNON AND CHARLOTTE BROU AT THE *ABITA ENTOMOLOGICAL STUDY SITE* - 2016

BY

VERNON ANTOINE BROU JR.



Zack Lemann, Programs Manager Audubon Butterfly Garden Insectarium, visiting on January 12, 2016.



Jim Vargo (L) visiting Vernon (R) & Charlotte Brou (behind camera) on February 29, 2016.

LYCIA YPSILON (S.A. FORBES, 1885) (LEPIDOPTERA: GEOMETRIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

Fig. 1. ***Lycia ypsilon*** phenotypes: males, a-f.

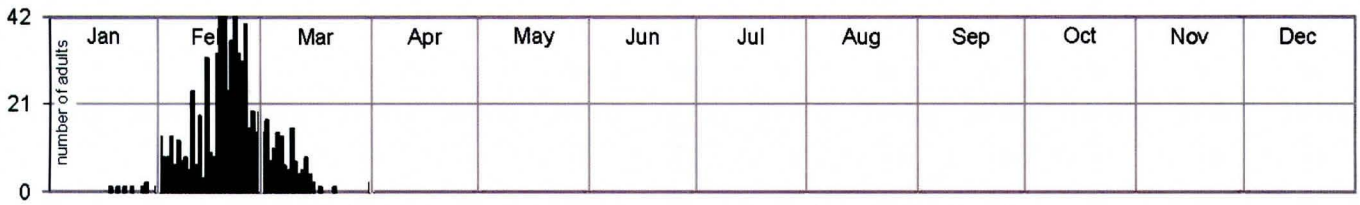


Fig. 2. ***Lycia ypsilon*** adult male captured in Louisiana. n = 767

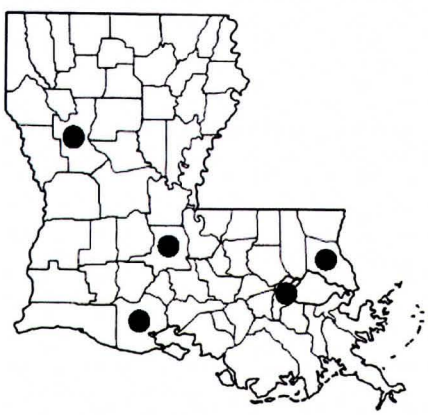


Fig. 3. Parish records.

Three species of the Geometridae genus ***Lycia*** Hübner are listed in the North American checklist (Hodges, 1983): ***Lycia ursaria*** (Walker, 1860), ***Lycia ypsilon*** (S.A. Forbes) (Fig. 1), and ***Lycia rachelae*** (Hulst, 1896). W.T.M. Forbes (1948) reviewed ***ypsilon*** listing records from New York, New Jersey Pennsylvania, Illinois, Minnesota, and ***Lycia ypsilon carlotta*** (Hulst, 1896) from Florida. Covell (1954) listed the range of ***ypsilon*** to include New York to Florida, west to Minnesota and Texas. Covell (1954) state this species is locally common, on the wing in April, earlier in the south, and the (larval) foodplant to be apple trees.

The female of this species is wingless and I have not seen any nor have I searched for it. Within Louisiana, ***ypsilon*** has a very early single flight period peaking the third week of February (Fig. 2). The parish records are illustrated in Fig. 3.

Rindge (1975) performed an in depth revision of the tribe Bistonini in North America, covering 22 species and six genera, including ***Lycia***, and in the process naming five new species in the genus ***Cochesia*** from the western U.S. The previous revision of this group was published in 1896 by Hulst. And in 1948, Forbes covered those species occurring in New York and neighboring states. This tribe also occurs in the Old World.

In Rindge's 1975 study he studied a population sample of 258 male specimens. He did not review the females which

are wingless. In this study, I captured 767 specimens of ***ypsilon***, all males as well. Rindge reported the flight period of ***ypsilon*** is January to March in the south and April to June further north. Rindge listed the range of ***ypsilon*** as the eastern U.S. south of latitude 43°, from Illinois and South Dakota to western Texas, and east to northern Florida and north to southern New York.

Rindge also discussed the one subspecies associated with ***ypsilon***, ***Lycia ypsilon carlotta*** (Hulst), Type locality: Charlotte Harbor, Charlotte County, Florida, with the distribution being peninsular Florida. In fact, Rindge considered giving ***carlotta*** full species status, but did not, because of brown colorations of male wings, and other differences in genitalia and antennae pectination. Specimens from northern Florida are typical gray and white coloration and are considered ***ypsilon ypsilon***.

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While canoeing on the Duck River near Franklin, Tennessee, we saw this beautiful Red-Spotted Purple (*Limenitis arthemis*) on the bank (June 30, 2014) . [The Editor]

A NEW LOUISIANA RECORD FOR AN ASIAN PYRALID SPECIES, *NACOLEIA CHARESALIS* (WALKER, 1859)

BY

VERNON ANTOINE BROU JR.

Fig. 1. ***Nacoleia charesalis*** (Walker)

January 16, 2016, a female moth new for the state of Louisiana was captured in a mercury vapor light trap at the *Abita entomological study site*: sec.24,T6S, Range 12 East, 4.2 miles northeast of Abita Springs, St. Tammany Parish, Louisiana.

Nacoleia charesalis (Walker) (Fig. 1) was previously reported for the first time in the United States from Florida (Hayden, 2014). This species has been reported in literature from Australia, Borneo, India, Ceylon, Japan, Republic of Philippines, Republic of Scheyelles, Republic of Singapore, Sumbawa, Sri Lanka, Taiwan (Republic of China), and Thailand (Wikipedia, and AfroMoths), Vietnam (Hayden and Troubridge, 2015).

According to the website AfroMoths and several other internet references, the Holotype female of ***charesalis*** is located in the Museum of Natural History, London. But, the literature references given for the location of the type do not corroborate that fact. James Hayden advised me (per. comm.) that information is incorrect, and that the type is in the Oxford Museum of Natural History, see also Hayden and Troubridge (2015). Hayden (2014) stated since its detection in Florida during 2012, ***charesalis*** has become widely distributed in the state, and in the Old World, the larvae feed in rotting fruit, leaf mulch and boring in stems of turmeric.

This newly introduced species is similar in general appearance to ***Herpetogramma phaeopteralis*** (Guenée), a common species in Louisiana, and consequently ***charesalis*** could be easily overlooked without careful examination.

The latest check list of Pyraloidea (Scholtens and Solis, 2015) indicates ***charesalis*** is introduced into America North of Mexico. Hayden and Troubridge (2015) provided details of the current status of ***charesalis*** dispersal within the state of Florida, providing records for its occurrence in ten counties.

This capture of ***charesalis*** is the latest in a long succession of new state or U.S. records for insect species I have captured over the past 47 years within the state of Louisiana. Some of these I have described as new species in scientific literature and some are yet to be reported upon, being species still currently undescribed in scientific literature. A few of the more notable species that are new discoveries or new introduced species, that I have recorded and reported upon are: ***Automeris louisiana*** Ferguson & Brou (Ferguson & Brou, 1981), ***Catocala atocala*** Brou (Brou, 1985), ***Catocala charlottae*** Brou (Brou, 1988), ***Harmonia axyridis*** (Pallas) (Chapin and Brou, 1991), ***Epitausa prona*** (Möschler) [reported as ***Anticarsia irrorata*** F.] (Brou, 1993, 2007), ***Maruca vitrata*** (Fabricius) (Brou, 1993), ***Niphograpta albiguttalis*** (Warren) (Brou, 1993), ***Parapoynx diminutalis*** Snellen (Brou, 1993), ***Lapara phaeobrachycerous*** Brou (Brou, 1994), ***Agrotis repleta*** Walker,(Brou, 1994), ***Omiodes martyralis*** (Lederer) (Brou, 1994, 2010), ***Gonodonta pyrgo*** (Cr.) and ***Eudocima apta*** (Walker) (Brou, 1994), ***Epidromia rotundata*** Herrich-Schäffer, (Brou, 1995), ***Franclemontia interrogans*** (Walker) (Brou, 1995), ***Noctua pronuba*** (L.) (Brou, 1995), ***Chaetaglaea fergusoni*** Brou (Brou, 1997, 2008), ***Nemoria extremaria*** (Walker) (Brou, 2001), ***Catocala umbrosa*** Brou (Brou, 2002), ***Baileya acadiana*** Brou and ***Baileya ellessyoo*** Brou (Brou, 2004), ***Panula inconstans*** Guenée, (Brou, 2006), ***Eudocima serpentifera*** (Walker) and ***Eudocima apta*** Walker (Brou, 2006), ***Lithophane laceyi*** (Barnes & McDunnough) (Brou, 2014), ***Lithophane abita*** Brou and Lafontaine (Brou and Lafontaine, 2009), ***Phrygionis privignaria*** Guenée (Brou, 2010), ***Loxa flavicollis*** (Drury) (Brou, 2010), ***Simplicia cornicalis*** (Fabricius) (Dickel, Brou and Heppner, 2010, Brou, 2013), ***Duponchelia fovealis*** Zeller (Brou, 2015), ***Tripudia paraplesia*** Pogue, (Brou, 2015), and hundreds of additional described and undescribed species.

I thank James Hayden for confirming the identity of this Louisiana specimen of ***charesalis*** and for providing other helpful information.

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NOTES ON OCTOBER BUTTERFLIES ALONG THE MISSISSIPPI-ALABAMA GULF COASTS

BY

GARY NOEL ROSS

In June 2015 I began research centered at Ocean Springs on the Mississippi Gulf Coast. My focus was the butterfly imagery in the artwork of Walter Inglis Anderson (1903-1965), one of the South's most prolific and renowned artists who spent most of his adult life in and around Ocean Springs and on neighboring Horn Island. I wished to document the status of two species of butterflies: white peacock (*Anartia jatrophae*) and heliconian or zebra (*Heliconius charithonia*). Both were painted by Anderson as local butterflies. Southern lepidopterists, however, regard each species to be only an occasional migrant to the Gulf coast. My results of that investigation were reported in *Walter Inglis Anderson and the Case of the Linoleum - Wood Block Butterfly Prints* (SLS NEWS, 2016, Spring -Vol. 38, No. 1).

To continue that research, I planned a fall trip to coincide with what I deemed to be peak season for fall nectar plants and influxes of monarch butterflies: Mid-October.

My observations spanned four geographical sites: Ocean Springs, Horn Island, West Ship Island (all in Mississippi), and Dauphin Island (Alabama). No specimens were collected. Results are below.

SITE A: OCEAN SPRINGS (Jackson Co.), Mississippi. October 12- 21

The Mississippi Gulf Coast continues to suffer from the devastation wrought by Hurricane Katrina in August 2005. During my drive along coastal highway U.S. 90, I couldn't help but notice that much of this prime property was still vacant. And the majestic live oak trees (*Quercus virginiana*) that were not toppled or severely damaged, seemed to be in a state of limbo between the living and the dead.

But the vacancies were not totally unaesthetic. The sun-drenched land had become the seeding ground for an abundance of wildflowers, now in full bloom. These included: at least two species of tall goldenrod (*Solidago*); narrow leaf sunflower (*Helianthus angustifolius*); blue mist flower (*Eupatorium coelestinum*); bidens = Spanish needle = beggar ticks (*Bidens pilosa*); and eastern baccharis (saltbush, groundsel bush, cotton-seed tree) (*Baccharis halimifolia*); lantana (*L. camara*). All were common and attractive to butterflies. Lantana was the favored source

Fig. 1. Live oak (*Quercus virginiana*) killed by salt water flooding during Hurricane Katrina, August 2005. Many trees were killed or heavily damaged, and much land still has not been re-developed. Ocean Springs.

of nectar when it was present—usually near current and previous homesteads. Otherwise, bidens was favored. During my stay, two minor and dry cold fronts passed through the region from the north. After each I noticed an increase in the number of monarchs. I did not, however, observe more than a few individuals at any given time or any nocturnal clusters.

Fig. 2. Goldenrod (*Solidago* sp.) in October full bloom. Common in most vacant lands along the MS-AL Gulf Coast. Ocean Springs.

The following venues were particularly productive: East Beach Drive, the extensive grounds of the William M. Colmer Visitor Center of GULF ISLANDS NATIONAL SEASHORE (Davis Bayou Division), SHEARWATER POTTERY, and pollinator-friendly gardens and vacant property in and adjacent to the GULF HILLS RESIDENTIAL COMMUNITY. Because the county

Fig. 3. Monarch (*Danaus plexippus*) nectaring on goldenrod. No strong migration evident. Ocean Springs.

Fig. 4. Monarch nectaring on Spanish needle or begger's ticks (*Bidens pilosa*) with goldenrod in background. Favorite nectar source for all butterflies during October. Ocean Springs.

Fig. 5. Monarch nectaring on blue mist flower (*Eupatorium coelesitnum*). Ocean Springs.

Fig. 6. Monarch nectaring on eastern baccharis (*B. halimifoli*). Ocean Springs.

maintains a mosquito abatement program, butterfly/caterpillar populations may be negatively impacted.

I observed 22 species of butterflies in the Ocean Springs area. I likely overlooked some of the nondescript skippers. Additionally, I spent more time in this area than in the other three sites. The species that I noted are:

Gulf fritillary (*Agraulis vanillae*)—50+
Common buckeye (*Junonia coenia*)—25
Monarch (*Danaus plexippus*)—25
Long-tailed skipper (*Urbanus proteus*)—15
Cloudless sulphur (*Phoebis sennae*)—12
Little yellow (*Eurema lisa*)—12
Whirlabout (*Polites vibex*)—10
Eufala skipper (*Lerodea eufala*)—10
Carolina satyr (*Hermeuptychia sosybius*)—6
Common checkered skipper (*Pyrgus communis*)—6
Salt marsh skipper (*Panoquina panoquin*)—6
Pipevine swallowtail (*Battus philenor*)—5
Phaon crescent (*Phyciodes phaon*)—4
Fiery skipper (*Hylephila phyleus*)—4
Gray hairstreak (*Strymon melinus*)—3
Horace's duskywing (*Erynnis horatius*)—2
Spicebush swallowtail (*Papilio troilus*)—2
Eastern tailed blue (*Everes comyntas*)—2
Pearl crescent (*Phyciodes tharos*)—2
Ocola skipper (*Panoquina ocola*)—2
Painted lady (*Vanessa cardui*)—1
Red-banded hairstreak (*Callycopis isobeon*)—1

SITE B: HORN ISLAND (GULF ISLANDS NATIONAL SEASHORE), (Jackson Co.), Mississippi. October 15

Horn Island is an uninhabited barrier island barely 12 miles off the Ocean Springs-Biloxi (MS) coast. The island is part of the GULF ISLANDS NATIONAL SEASHORE (GINS) that consists of seven west-east units: Cat Island, West Ship Island, East Ship Island, Horn Island, Sand Island, Petit Bois Island—all in Mississippi, and Santa Rosa Island in Florida. In Mississippi, these islands separate Mississippi Sound from the true Gulf. In Florida, Santa Rosa separates

Fig. 7. Entrance sign to GULF ISLANDS NATIONAL SEASHORE (GINS). Ocean Springs.

Fig. 8. William M. Colmer Visitor Center, GULF ISLANDS NATIONAL SEASHORE. Ocean Springs.

Pensacola Bay from the Gulf. Because these islands parallel the coast, the islands are strategic offshore barriers that help protect the coastal mainland from tropical storms. GINS was established in 1971 by the U.S. Congress. Then in 1978—and by another act of Congress—Horn Island and its eastern neighbor, Petit Bois Island, were designated National Wilderness Areas as part of the "National Wilderness Preservation System." The entire GINS system is under the jurisdiction of the National Park Service (NPS), an agency of the U.S. federal government that manages national parks, national monuments, and other conservation and historic properties with various formal titles. [All such designations are being highlighted this year during the NPS's centennial celebration.] Horn Island's classification of "National Wilderness Area" provides federal protection for all species of animals, plants, sea life, and natural conditions for generations to come. In accordance with law, nothing on the island should be disturbed or removed. Ergo, visitors should practice the principle of "Leave No Trace." As lagniappe, the "wilderness" designation affords visitors with opportunities for primitive recreation and solitude. Horn Island is about 13 miles in length and 0.5 miles in width at its center—approximately 5-6 square miles in area. Horn is not easily observable from the coast near Ocean Springs. The view is blocked by a spit of coastal marsh and Deer Island, a sliver of sand punctuated with dead tree trunks and positioned barely one mile offshore in the Mississippi Sound. All of the barrier islands off Mississippi are slowly migrating westward, *i.e.*, land is being eroded on the eastern tip and accreting on the west. This is due to prevailing ocean currents. Additionally, the islands are slowly migrating southward, *i.e.*, into the Gulf. As a result, beaches on the Gulf side are more extensive than those facing the Sound. Horn supports sizable tracts of forests—slash or southern pine (*Pinus elliottii*). The resulting tall tree line is a unique signature for Horn.

There is a substantial wooden pier located in the middle of the Sound side of Horn. Docking of a vessel, however, is reserved for National Park Service personnel (especially a Law Enforcement Ranger) and for emergencies. Visitors must disembark and re-embark either in shallow water near the beach or directly onto the beach. From the pier a trail accesses a modern Ranger Station equipped with a generator, telecommunications equipment, and water from a well. The structure is contained within a protective wire fence; it is off limits to non-official visitors. No permit is required for a day's visit to the island. Overnight camping on the beach, however, is discouraged —although possible with a pre-visit permit. The island and surrounding waters are patrolled routinely by a NPS Law Enforcement Ranger who has the authority to ticket any individual who transgresses rules that pertain to a National Wilderness Area.

During my earlier visit to the coast in June, I learned that personnel from GULF ISLANDS NATIONAL SEASHORE (GINS) could not accommodate me with transportation to Horn. In addition, GULF COAST RESEARCH LABORATORY (GCRL)—a marine laboratory operated by the University of Southern Mississippi in Ocean Springs—was also of no assistance. Determined not to abandon my ambitious project, I decided that I would hire a private boat captain. Therefore, upon arriving in Ocean Springs, I quickly contacted Danny Jalanivich, the Harbor Master for OCEAN SPRINGS SMALL CRAFT HARBOR. Mr. Jalanivich did have a recommendation, but upon interviewing the captain, the quoted price was beyond my means. But then a stroke of luck. Mr. Jalanivich informed me that he was due a break from his office so that he could indulge his hobby of fishing. So he made me a proposition: For simply the cost of outboard motor fuel, he would personally transport me to the island in the morning, drop me off, and pick me up in the afternoon. He and his twenty-nine year old son, Danny,

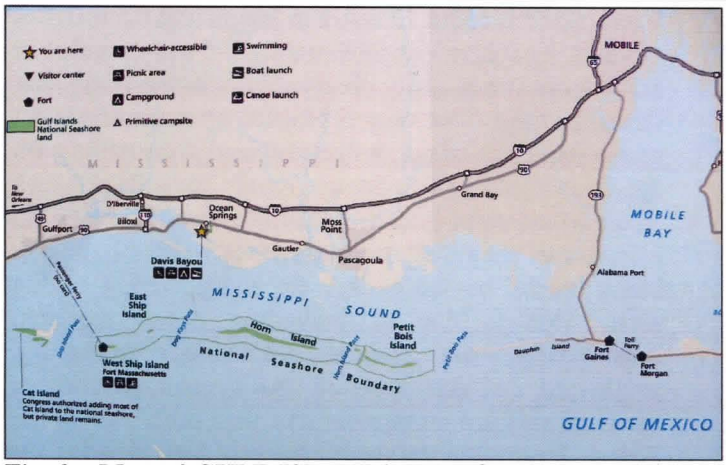

Fig. 9. Map of GULF ISLANDS NATIONAL SEASHORE. Display at WMC Visitor Center. Ocean Springs.

Fig. 10. The 100-foot, 300-passenger ferry vessel operated by "Ship Island Excursions," GULFPORT SMALL CRAFT HARBOR. June.

would spend the day fishing in the vicinity. I leaped with joy! Because weather at the time was in a hold mode of clear, dry, warm, with calm seas, we selected the upcoming Thursday, October 15, just two days hence.

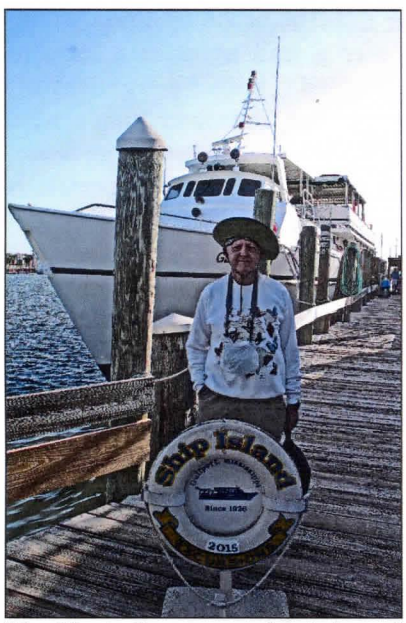

Fig. 11. Author preparing to board vessel in GULFPORT SMALL CRAFT HARBOR for trip to West Ship Island. October. Photograph courtesy of Tim Pauls ("Ship Island Excursions").

My hosts had borrowed a 21-foot Key West Bay Boat equipped with a 225 hp Evinrude E. Tech outboard motor. Because the water was calm, we cruised at about 35-42 mph. We launched from the boat slip of GCRL at 9:00 am. Within only a few minutes we cleared the small marshy inlet to enter the Mississippi Sound. And within only another few minutes Horn Island began to loom faintly on the southern horizon. My initial impression was that the island is much larger with more trees than I had imagined. En route we were treated to several small pods of Atlantic bottlenose dolphins (*Tursiops truncatus*) and several small groups of brown pelicans (*Pelecanus occidentalis*). As we cruised through the calm waters at a modest 30-35 mph, my mind reflected on Walter Inglis Anderson who had traveled this same route many times—not within a motor boat, but in a hand-rowed skiff. The seemingly impossible undertaking can only be viewed as testimony to the artist's passion for nature in the raw.

Within barely 25 minutes of launching we were within a few hundred feet of shore and over dark green beds of seagrass (important spawning grounds for many fish and invertebrates). As we slowed down, we spotted two large (10-12 inches across) and translucent jelly fish. After being dropped of, I decided that for safety, I should designate the pier, which was vacant at the time, as my point of reference. Additionally, this site is one of only three that offers trail access across the island. By 9:30 am, my hosts departed to engage in recreational fishing—with a promise to return about 4:00 pm.

As the boat disappeared from sight, I stood in silence on the sugary sand beach. Drift wood and snags of dead treetrunks testified to past hurricanes and erosion by currents within the Mississippi Sound. My body began to tingle as I contemplated the profundity of the moment. After all, this was my long-sought opportunity to shadow in the footprints of the storied Walter Inglis Anderson who regarded the island as his keystone venue, *i.e.*, his personal studio (see The *Horn Island Logs of Walter Inglis Anderson* by Redding S. Sugg, Jr.), and who in 2013 had become my personal muse.

Fully stoked, I began my odyssey. My immediate impression was that the island of no more than 5-6 square miles was a montage of mini-habitats. Any idea of sampling the majority of the land in a single day had to be quickly dispelled. Understanding this limitation, I decided to first tackle the well-worn trail in sand that led from the beach at the end of the pier into the interior of the island. Within a few hundred feet I entered a heavily vegetated marsh—dry but still active with hoards of mosquitoes. Having anticipated the bloodsuckers, I sprayed myself with a repellant and then continued. Eastern baccharis was common; most plants were in seed, but some still were in flower and attracting Gulf fritillaries and common buckeyes.

The Ranger Station was on ground high and dry enough

Fig. 12. Sand dunes, mature sea oats, and "Ship Island Excursions" vessel in background at docking peer on West Ship Island. Fence slows erosion of dunes. October.

Fig. 13. Erosion on Sound beach of Horn Island. Island is slowly migrating westward and southward due to prevailing currents.

Fig. 14. View of Sound beach from offshore. Horn Island.

Fig. 15. Skippers Danny and Daniel Jalanivich at dock of GULF COAST RESEARCH LABORATORY in Ocean Springs for trip to Horn Island. Boat is a 21-foot Key West Bay Boat equipped with an Evinrude E Tech 225 horsepower outboard motor.

Fig. 16.

Fig. 17.

Fig. 16. Captain Danny Jalanivich and his son, Daniel, offshore from Horn Island (background). Boat cruised at 30-35 mph and took 25 minutes to reach the island located 12 miles south of Ocean Springs and Biloxi.

Fig. 17. Pier at HORN ISLAND NATIONAL WILDERNESS AREA, GULF ISLANDS NATIONAL SEASHORE. Pier is reserved for use by official Rangers.

to accommodate scattered clumps of prickly pear cactus (*Opuntia*) and saw palmetto (*Serenoa repens*). (The later was in both blossom and seed.) Nearby patches of sand were ablaze with bright yellow flowers: yellow buttons (*Balduina angustifolia*). The species was a magnet for monarchs, Gulf fritillaries, and common buckeyes.

Fig. 18. Ranger Station in middle of Horn Island.

Fig. 19. Beach, sand dunes, and sea oats (*Uniola paniculata*) on Gulf beach of Horn Island. Dunes are expanding southward.

From the station, the trail continued south to access the Gulf-facing shore. The beach here was more expanded than its counterpart on the Sound. The upper beach was punctuated with clumps of sea oats (*Uniola paniculata*) and trailing beach morning glory (*Ipomoea stolonifera*). I trudged a few hundred yards in hopes of gaining access to a parcel of forested land or perhaps even one of the island's seven brackish inland ponds, all of which I was cautioned, harbor high populations of American alligators (*Alligator mississippiensis*) and the poisonous cottonmouth-water moccasin snake (*Agkistrodon piscivorus*). [Both species thrive because of a rich diet of salt-water fish that are periodically flushed into the ponds by high tides, become stranded, and then easy pickings for predators.] I found, however, that both habitats were surrounded by thick patches of yaupon holly (*Ilex vomitoria*) and other heavy shrubbery and

Fig. 20. Sand dunes, slash pine (*Pinus elliottii*), saw palmetto (*Serenoa repens*), and yaupon holly (*Ilex vomitoria*) on Sound side of Horn Island. Coastline of mainland is barely visible on horizon 12 miles north.

grasses. This made access very difficult—not to mention downright dangerous for someone alone on the island. Disappointed but prudent, I backtracked to return to the beach on the Sound.

A considerable number of dead pine trees accented the Sound beach and dunes. The trees had been killed by the high winds and salt-water intrusion dealt by Hurricane Katrina (2005). Many of the skeletonized trees were topped with large nests of osprey (*Pandion haliaetus*). [My hosts informed me that bald eagles (*Haliseetus leucocephalus*) nest on the island, too.]

The sand was crystalline white, picturesque. But the sand was peppered with miscellaneous trash that had washed ashore. Here, too, I observed a number of dried carapaces of the oddity known as the Atlantic horseshoe crab (*Limulus polyphemus*), considered a living fossil but a common breeding resident in the shallow waters in the Mississippi Sound.

Having over exerted myself with walking in sand, I eventually paused to refresh myself with the meager lunch I had packed: a can of "Vienna Sausage," a nutrient power bar, an apple, and a bottle of "Powerade." Although shade was at a premium near the beach, I managed to locate a lone pine tree for protection from the sun in a cloudless sky. Seated on a piece of drift wood, my mind again reflected to Walter Inglis Anderson. For eighteen-plus years, the artist spent two-to-three weeks throughout the warm months on the island. He used his over-turned boat for shelter and boiled rice amended with canned vegetables and meats from a small driftwood-stoked fire for sustenance. As with Anderson, I quickly became aware of the physical harshness of the environment. But also like Anderson, I recognized that such severity was overshadowed by soul-inspiring solitude and wildness.

Fig. 21. Thicket of yaupon holly (*Ilex vomitora*) with fruiting red berries. Thickets are virtually impenetrable. Horn Island.

Fig. 22. Horseshoe crab (*Limulus polyphemus*) on Sound side of Horn Island. This "living fossil" is a common resident in the Mississippi Sound.

Fig. 23. Osprey nest in dead pine tree. Empty nests were common. Horn Island.

Following "lunch," I again tried to gain access to forest and pond from this Sound side of the island. But no luck. I did, however, manager to locate a few wildflower meadows of *Balduina angustifolia* and woody goldenrod (*Chrysoma pauciflosculosa*) growing behind primary sand dunes. I had anticipated finding goldenrods covered in monarchs. Consider: (1) R.S. Sugg, Jr. reported in *The Horn Island Logs of Walter Inglis Anderson* that the artist penned for October 21: "Another nor'wester…flocks of Monarch butterflies are sheltering out of the wind everywhere" (Page 160). And for the November 3 entry: "Beautiful butterflies on the way…fritillaries (surely Gulf), monarchs.." (Page 161). (2) In *Horn of Plenty: Seasons in an Island Wilderness*, April Newlin, the author who in 2001 tried to retrace some of Anderson's wanderings on the island, noted a variety of butterflies on October 20: "Within seconds of our arrival, the first monarch flits past…. Clumps of goldenrod blossom, in monarch orange, stems with wings, flies with leaves. Flower and fly metamorphose into monarch bushes with five or more butterflies nectaring on a single shrub. Corollas open and close as if in time lapse as wings animate the standing tips of wooden goldenrod…." (3) During my earlier trip in June to Ocean Springs, I had watched an educational video shown in THE WALTER ANDERSON MUSEUM OF ART in which the artist is depicted sketching monarchs visiting goldenrods. All in all, I concluded that Horn Island acted as a staging ground for monarchs to launch across the Gulf during their southern migration to Mexico—a similar situation to what I had documented along the western coast of Louisiana near Cameron.

Fig. 24. Trash on Sound beach on Horn Island. A visitor used their whimsical imagination to position chair and television. Coastline of mainland is barely visible on horizon 12 miles north.

In the habitats that I accessed, small woody goldenrod was plentiful, but tall goldenrods (*Solidago* spp.) were not although they were in full bloom. Monarchs, too, were only spotty. During my conversation with Ronda Harper, the Law Enforcement Ranger now moored at the pier, indicated that in the past she had witnessed influxes of monarchs—probably in late in late October. Guess I was about one week too early. [**NOTE:** In early 2016, I contacted Ronda Harper to learn if she noticed any influx of monarchs after my departure; however, I received no reply.]

Fig. 25. Sand dunes and fruiting (red berries) of yaupon on Sound side of Horn Island.

Fig. 26. Beach and slash pine tree on Sound side of Horn Island.

Fig. 27. Beach, sand dunes, and fruiting yaupon holly. Dunes are eroding due to prevailing currents and occasional hurricanes.

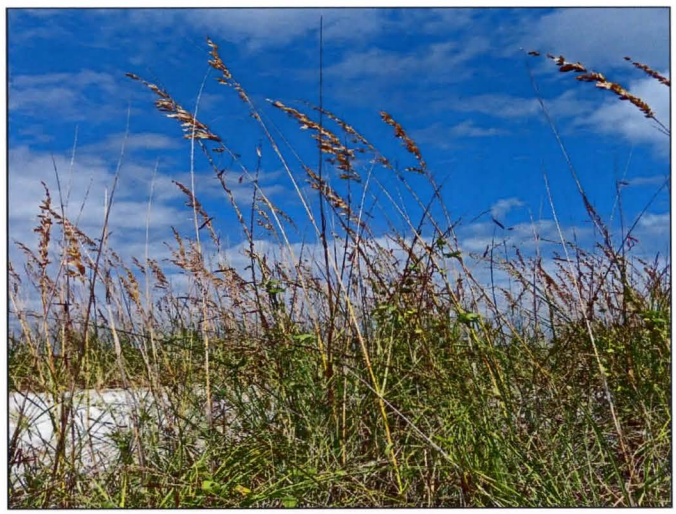

Fig. 28. Sea oats on Gulf beach of Horn Island.

Fig. 29. Beach morning glory (*Ipomoea stolonifera*) on Gulf beach of Horn Island.

Fig. 30. Saw palmetto (*Serenoa repens*) being buried by drifting sand on Gulf beach of Horn Island.

Fig. 31. Prickly pear cactus (*Opuntia*) and yellow buttons (*Balduina angustifolia*) in center of Horn Island.

Fig. 32. Yellow buttons (*Balduina angustifolia*) in center of Horn Island; the most common flowering plant in October. Biloxi coastline is barely visible on horizon, 12 miles north.

Fig. 33. Slash pine and meadow of yellow buttons (*Balduina angustifolia*) in interior of Horn Island.

Fig. 34. One of seven brackish water ponds in center of Horn Island. Ponds are home to high populations of alligators and cottonmouth water moccasins due to large numbers of fish flushed in during periodic high tides.

Fig. 35. One of seven brackish water ponds in center of Horn Island. Woody goldenrod (*Chrysoma pauciflosculosa*) is flowering in foreground.

Fig. 36. Sound side of Horn Island with slash pine tree, pond, and osprey nest in distance.

Fig. 37. The Jalanivich's day's catch in the Gulf waters off Horn Is. Nine fish: 1 king mackerel, 2 Spanish mackerel, 2 pompano, 2 redfish, 1 mullet, 1 Atlantic crocker.

At 4:00 pm the Jalnivichs and I rendezvoused near the pier. I had spent an exhausting six and a half hours exploring approximately three to four miles of both Sound and Gulf beaches as well as a small portion of the island's interior. In the process, I developed a visceral respect and appreciation of Walter Inglis Anderson. Scientifically, I documented the presence of 11 species of butterflies, a number that surely would have been greater had I been able to access the pine forests and grassy borders of a pond or two. My hosts, the Jalanivichs, were pleased with their catch for the day: nine fish (1 king mackerel, 2 Spanish mackerel, 2 pompano, 2 redfish, 1 mullet, 1 Atlantic crocker).

The 11 species of butterflies that I documented on Horn Island are:

Gulf fritillary (*Agraulis vanillae*)—75+

Fig. 38. Gulf fritillary (*Agraulis vanillae*) on eastern baccharis (*Baccharis halimifolia*) on Horn Island. Plant and butterfly were common in the interior of the island.

Common buckeye (*Junonia coenia*)—40
Monarch (*Danaus plexippus*)—12
Little yellow (*Eurema lisa*)—6
Orange sulphur (*Colias eurytheme*)—5
Fiery skipper (*Hylephila phyleus*)—2
Twin-spot skipper (*Oligoria maculata*)—2

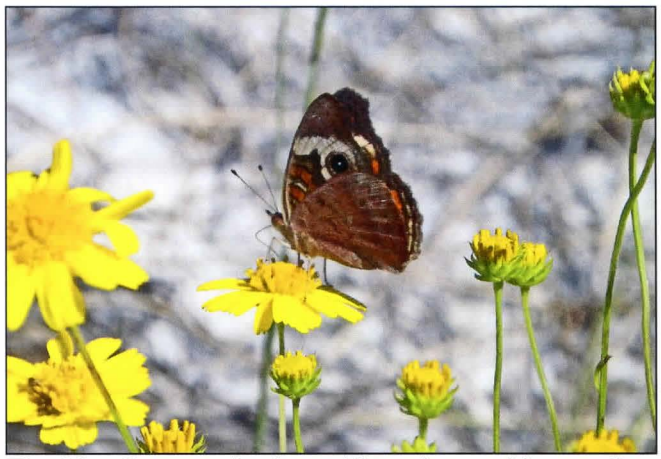

Fig. 39. Common buckeye (*Junonia coenia*) on yellow buttons (*Balduina angustifolia*). Horn Island.

Fig. 40. Monarch (*Danaus plexippus*) on yellow buttons (*Balduina angustifolia*). Horn Island.

Cloudless sulphur (*Phoebis sennae*)—2
Dainty sulphur (*Nathalis iole*)—1
Gray hairstreak (*Strymon melinus*)—1
Sachem (*Atalopedes campestris*)—1

[**NOTE:** During my day's visit I did not observe either the WHITE PEACOCK (*Anartia jatrophae*) or ZEBRA (HELICONIAN) (*Heliconius charithonia*), the two species that had prompted my interest in the Mississippi Gulf Coast back in June. Additionally, I did not identify any of the host plants for either species. Whether or not either butterfly species has ever been a resident on or migrant to the island remains unknown.]

SITE C: WEST SHIP ISLAND (GULF ISLANDS NATIONAL SEASHORE), (Harrison Co.), Mississippi. October 20

I first visited this island located 11 miles south of the Gulfport-Biloxi coastline during my first road-trip to the Mississippi coast in June. To my surprise, at that time I did not observe a single butterfly. So in October, I was motivated to try again. SHIP ISLAND EXCURSIONS, based in Gulfport Small Craft Harbor (off U.S. Highway

90), was still operating (excursions are conducted only March 14 through November 1, but with limited times during spring and fall). The company operates two vessels: "Captain Pete" and "Gulf Islander." Each is a 100 foot, 300-passenger ferry vessel—comfortable and wheelchair accessible. On the Wednesday that I selected, skies were clear with only a moderate southerly breeze. Our boat, the "Gulf Islander" departed at 9:00 am sharp for the one-hour trip to the island. En route we spotted several small pods of playful Atlantic bottlenose dolphins, occasional small groups of brown pelicans, and even two monarch butterflies—the later, flying northward from the island on a prevailing southerly breeze.

West Ship Island was created when Ship Island was split in half by Hurricane Katrina (2005). Both segments are now part of the GULF ISLANDS NATIONAL SEASHORE, MISSISSIPPI DISTRICT. West Ship is the only island other than Santa Rosa Island in the GINS (FLORIDA DISTRICT) that is maintained as a formal

Fig. 41. Sign on West Ship Island. Island is treeless and few butterflies were observed. June.

recreational site for tourists. On West Ship, GINS has done an excellent job to accommodate tourists: a substantial pier that includes a 400-foot boardwalk to the island, restrooms, water fountains, shaded seating areas, boardwalks connecting all major points, and a free tour of the fort. An official National Park Service concession markets snacks and drinks, and rents beach umbrellas/chairs for beach-side activities. Fort Massachusetts (begun in 1859 though not completely bricked until 1868) is a prime tourist attraction. The historic structure was built to take advantage of a natural deep harbor bordering the island (hence the name, Ship Island). The fortification was to defend New Orleans and the Mississippi coast during the Civil War. At the time of my October visit, the setting was particularly attractive because of the mature sea oats swaying in the breeze atop the surrounding sand dunes.

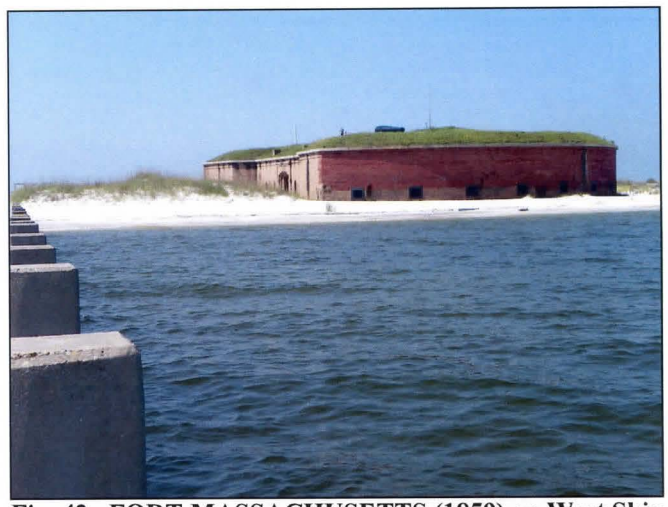

Fig. 42. FORT MASSACHUSETTS (1859) on West Ship Island from docking pier on Sound-side of island. National Park Service conducts free tours for visitors. June.

Fig. 43. FORT MASSACHUSETTS on West Ship Island, from Sound-side beach. June.

Both West Ship and East Ship are devoid of trees. The tallest plants are yucca or Spanish bayonet (*Yucca* sp.), rattle box (*Sesbania drummondii*), and saw palmetto. Marsh and sand dune vegetation dominate. Conspicuous species include: sawgrass (*Cladium jamaicense*), cordgrass (*Spartina patens*), eastern baccharis (*B. halimifolia*), sedges (family Cyperaceae), rushes (family Juncaceae), cattail (*Typha domingensis*), sea oats (*Uniola paniculata*), and silver leaf croton (*C. argyranthemus*).

To my pleasant surprise, the island was more "alive" than in June: sea oats sported mature seed, and clumps of tall goldenrods (*Solidago*) and woody goldenrod (*Chrysoma pauciflosculosa*) were in full bloom (yellow). Another surprise: Frogfruit (*Phyla nodiflora*), host for white peacock (*Anartia jatrophae*), phaon crescent (*Phyciodes phaon*), and common buckeye (*Junonia coenia*)—was as in June—still in bloom within the patio of the fort and in adjacent mowed areas. Although the weather at departure in Gulfport was clear, clouds with

Fig. 44. FORT MASSACHUSETTS on West Ship Island, with sand dunes and sea oats (*Univola paniculata*). October.

Fig. 45. Boardwalk with maturing tall goldenrod (*Solidago* sp.) near FORT MASSACHUSETTS on West Ship Island. October.

Fig. 46. Gulf side of West Ship Island provides swimming, surfing, beach combing, and relaxing. Beach is more extensive than the beach on Sound. June.

Fig. 47. Small marsh on Sound side of West Ship Island. October.

Fig. 48. Small meadow of woody goldenrod, most common flowering plant on West Ship Island. October.

Fig. 49. Frogfruit (*Phyla nodiflora*), host plant for white peacock (*Anartia jatrophae*), phaon crescent (*Phyciodes phaon*), and common buckeye (*Junonia coenia*) growing in mowed patio within FORT MASSACHUSETTS, West Ship Island. June.

a stiff wind moved in from the Gulf shortly after we docked. The inclement weather continued until our departure at 2:30 pm. In an ironic twist of fate, the skies cleared as we approached the Gulfport harbor.

During my venture on West Ship Island I identified only three species of butterflies:

Common buckeye (*Junonia coenia*)—75+
Gulf fritillary (*Agraulis vanillae*)—6
Monarch (*Danaus plexippus*)—2

Junonia coenia was particularly attracted to the inconspicuous spent flower heads of silver leaf croton (*Croton argyranhemus*), common on sand dunes. Because the island offers ideal habitat for a variety of skipper butterflies (family Hesperiidae), I hypothesize that if the weather had been more amenable, I would have been able to log in several of these small species.

SITE D: DAUPHIN ISLAND (Mobile Co.), Alabama. October 22-23

Dauphin Island is a fourteen-mile-long barrier island southwest of Mobile Bay. The island is inhabited and accessible by Alabama State Highway 193 via a north-south causeway from the mainland. Historically, the island was important during the Civil War ("Battle of Mobile Bay") because of FORT GAINES (1861) at the extreme eastern end of the island. Today the island is a residential community with only minor commercial development—except for several high-rise condos that during warm weather attract numerous visitors.

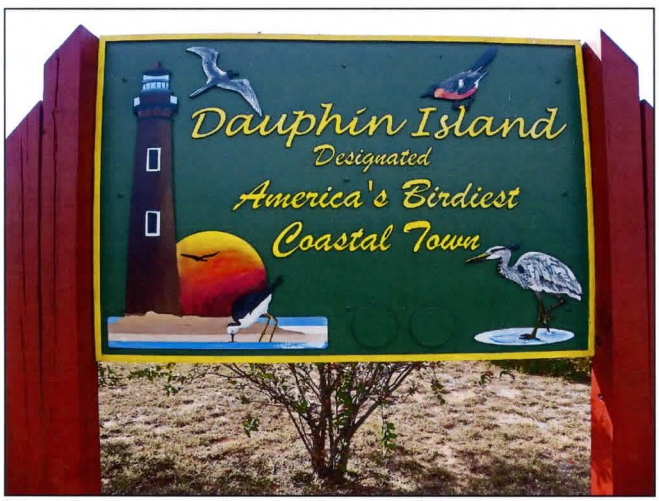

Fig. 50. Entrance sign for Dauphin Island, AL. Island is a popular summer resort accessible by a free causeway.

Highway 193 enters the island at its widest (central) point. From there the highway intersects Bienville Blvd, an east-west thoroughfare (including a bike/hiking trail) that transverses most of the island. The East End branch terminates at historic FORT GAINES and MOBILE BAY FERRY, the latter a commercial pedestrian/vehicular craft that provides access to historic FORT MORGAN and the highly developed recreational communities of Gulf Shores and Orange Beach on coastal Alabama. The West End branch terminates at a public beach with access to extensive marsh lands and dunes.

The most productive location for viewing a diverse assortment of butterflies on the island proved to be DAUPHIN ISLAND AUDUBON BIRD SANCTUARY (DIABS) accessed from the East End of Bienville Blvd.

Fig. 51. Entrance sign to DAUPHIN ISLAND AUDUBON BIRD SANCTUARY (DIABS). No entrance fee.

The reserve consists of 164 acres of maritime forest, marshes and a bog-like wet area, dunes, a lake, a swamp, and a beach with dunes; there is no entrance fee. (An adjacent DAUPHIN ISLAND CAMPGROUND accommodates extended day tourists.) The forest is quite extensive and represents the highest concentration of woodlands on the island. Groves of large live oak trees (*Quercus virginiensis*) and slash (southern) pine trees dominate. Within the reserve, a three-mile loop trail provides recreational activities such as walking, photographing, and bird watching. (During my visit I observed four different pairs of bird watchers and two speed walkers.) This shaded habitat is an important stop-over place for Neotropical migratory birds both in spring and fall. I imagine the tree cover provides excellent sanctuary for migrating monarchs, too. I spent three mornings hiking the trails. I observed a substantial number of warblers in the trees and monarchs visiting eastern baccharis, common along sunny boardwalks. I did not however, observe masses of monarchs. The bog-like wetland was dry and most wetland plants were brown. Because of the congested dried vegetation creating excellent hiding places for snakes, I didn't venture beyond the boardwalk. I predict that this habitat in the spring with its fresh foliage—including pitcher plants (*Sarracenia*), a special feature of the habitat—would prove productive for skipper and hairstreak butterflies.

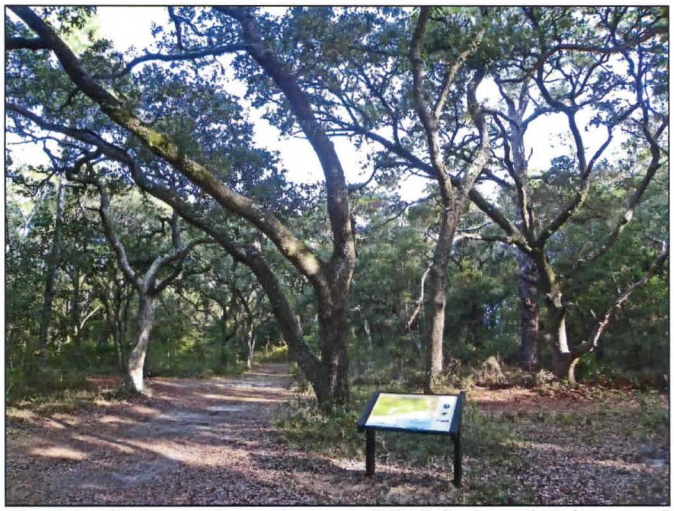

Fig. 52. Grove of live oak trees, DIABS. Area is often used to band migratory neotropical birds.

Fig. 53. Osprey nest on artificial metal pole in DIABS.

Fig. 54. Boardwalk in DIABS. Eastern baccharis (*Baccharis halimifolia*) was in full bloom and seed. Blossoms were attractive to butterflies.

Fig. 55. Marsh/bog in DIABS, but dry in October. In spring, pitcher plants (*Sarracenia*) bloom.

Fig. 56. Sand dunes in DIABS on Gulf side of Dauphin Is. Woody goldenrod (*Chrysoma pauciflosculosa*) in full bloom. Wooden fence is to control erosion and sand drift.

Fig. 57. Clump of lantana (*Lantana camara*) on grounds of THE ESTUARIUM, Dauphin Is.

Dauphin contained the highest concentrations of lantana and Spanish needle of any of my study sites. The plants were abundant in virtually all sunny, open areas. Lantana was the dominant nectar plant for all butterflies although Spanish needle ran a close second. Massive clumps of lantana occupied the natural area adjacent to THE ESTUARIUM, associated with the DAUPHIN ISLAND SEA LAB. The modern aquarium (fee charged) introduces visitors to the "Mobile Estuary System." The educational/tourist facility is located across the street from historic FORT GAINES (1821) at the island's East End. As with THE ESTUARIUM, FORT GAINES proved to be an excellent venue for viewing butterflies.

Fig. 58. Entrance to THE ESTUARIUM at eastern end of Dauphin Is., opposite historic FORT GAINES.

Fig. 59. Sign for historic FORT GAINES (1821) at eastern tip of Dauphin Is. Grounds are dotted with clumps of butterfly-friendly lantana.

A conversation with Connie Roan, a retired school teacher, volunteer for the DAUPHIN ISLAND WELCOME CENTER, and a local bird and butterfly enthusiast informed me that she noticed that monarchs and Gulf fritillaries had dramatically increased in numbers the week before. This increase in monarchs can be explained by the known annual fall migration of the species. An explanation for the Gulf fritillary, however, is less clear. I failed to notice any passionflower vines on the island in spite of the fact that I was looking for the plant and the DIABS seemed to be a perfect habitat (vines could have been so defoliated at the time that I failed to recognize it). Also, as far back as 1930, authors have historically noted local mass movements of *Agraulis vanillae* in the United Sates as well as tropical lands farther south. I think it reasonable to assume that the increased numbers of *A. vanillae* on Dauphin in October was another documentation of a seasonal southern mass movement (emigration) of the species.

West of the island's center, the land narrows. There, Bienville Blvd. is flanked by residential houses that are occupied usually only during the summer tourist season. Flower-filled ditches with tall goldenrod and frogfuit flanked the roadway. Most flowers were attracting bees, monarchs and common buckeyes. The road terminates at a public beach, beyond which the land narrows into Gulf-facing and Bay-facing beaches separated by marshes in various stages of succession. Although there are no trails, one can easily ramble along the beaches and even within some sections of marsh during dry weather and low tides. During my hike I identified several colonies of glassworts or saltworts (*Salicornia* or *Salsola*) growing in wet locales near the Bay-facing beach. Because these salt-tolerant species are recorded host plants for the eastern pygmy blue (*Brephidium isophthalma*), I expected to observe a few of these butterflies; regrettably, such was not the case.

Fig. 60. Beach and Gulf on western end of Dauphin Is.

I observed 11 species of butterflies on Dauphin Island:

Gulf fritillary (*Agraulis vanillae*)—75+
Monarch (*Danaus plexippus*)—40-50
Common buckeye (*Junonia coenia*)—30-40
Long-tailed skipper (*Urbanus proteus*)—28
Salt marsh skipper (*Panoquina panoquin*)—10
Whirlabout (*Polites vibex*)—8
Cloudless sulphur (*Phoebis sennae*)—5

Common checkered skipper (*Pyrgus communis*)—4
Phaon crescent (*Phyciodes phaon*)—3
Sleepy orange (*Eurema nicippe*)—1
Gray hairstreak (*Strymon melinus*)—1

Fig. 61. Bay-side beach and marsh on western end of Dauphin Is. No trails, but walking is easy at low tide.

CONCLUSION

All in all, 27 species of butterflies were identified in four sites over 12 days (letters refer to specific geographical site):

Pipevine swallowtail (*Battus philenor*)—A
Spicebush swallowtail (*Papilio troilus*)—A
Orange sulphur (*Colias eurytheme*)—B
Cloudless sulphur (*Phoebis sennae*)—A, B, D
Little yellow (*Eurema lisa*)—A, B
Sleepy orange (*Eurema nicippe*)—D
Dainty sulphur (*Nathalis iole*)—B
Gray hairstreak (*Strymon melinus*)—A, B, D
Red-banded hairstreak (*Callycopis isobeon*)—A
Eastern tailed blue (*Everes comyntas*)—A
Gulf fritillary (*Agraulis vanillae*)—A, B, C, D
Phaon crescent (*Phyciodes phaon*)—A, D
Pearl crescent (*Phyciodes tharos*)—A
Painted lady (*Vanessa cardui*)—A
Common buckeye (*Junonia coenia*)—A, B, C, D
Carolina satyr (*Hermeuptychia sosybius*)—A
Monarch (*Danaus plexippus*)—A, B, C, D
Long-tailed skipper (*Urbanus proteus*)—A, D
Horace's duskywing (*Erynnis horatius*)—A
Common checkered skipper (*Pyrgus communis*)—A, D
Fiery skipper (*Hylephila phyleus*)—A, B
Whirlabout (*Polites vibex*)—A, D
Sachem (*Atalopedes campestris*)—B
Eufala skipper (*Lerodea eufala*)—A
Twin-spot skipper (*Oligoria maculata*)—B
Salt marsh skipper (*Panoquina panoquin*)—A, D
Ocola skipper (*Panoquina ocola*)—A

The Gulf fritillary was the most common species throughout the study except on West Ship Island where it was outnumbered by the common buckeye. I regard the butterfly numbers in each research locale to be relatively low. I theorize that this small number is the result of one or a combination of the following factors: lateness of the season, unfavorable weather during the previous spring and summer breeding seasons, and my limited times of observation. I did not observe massive numbers or nocturnal roosts of monarchs at any site. However, each day the number of individual monarchs did seem to increase—especially after the passage of the two dry cold fronts during my stay. Had I remained several additional days, I may have witnessed a strong southern migration?

I was disappointed, too, in that I could not locate any colonies of the eastern pygmy blue (*Brephidium isophthalma*), particularly on Dauphin Island. Another species that eluded me was the great southern white (*Ascia monuste*), a species often evident during summers along the Louisiana coast at Grand Isle and Cameron. Additionally, I remember seeing this species in relatively high numbers in the vicinity of Waveland/Bay St. Louis when I was a youngster enjoying my family's annual week-long vacations each June. [As an aside, this area was the epicenter for landfall of Hurricane Katrina. The communities still have not recovered.] The image of large numbers of individuals—both the typical and dark female forms that were feeding on clumps of Brazilian vervain (verbena) (*Verbena brasiliensis*), an exotic and invasive weed that grew along a railroad track across the street from our rented cottage — is etched in my mind. In truth, specimens of the great southern white became the first specimens in what would become my formal butterfly collection.]

I hope other lepidopterists will investigate the butterfly and moth fauna of this poorly sampled but potentially highly productive geography. We live, we are told, in the age of a warming climate. Who knows what awaits in the not-too-distant future!

ACKNOWLEDGEMENTS

This project was personally funded. Although many people assisted in my endeavors (and I am indebted to all), a would like to extend a special "THANK YOU" to the following: The Anderson family (Ocean Springs) for their interest with my project and for sharing their historical information with me during my visits to SHEARWATER PORTTERY, LTD. (102 Shearwater Dr., Ocean Springs) and REALIZATIONS, LTD.: THE WALTER ANDERSON SHOP (1000 Washington Ave., Ocean Springs); James (Jim) Anderson, Peter Wade Anderson, and David Taylor (potters at Shearwater, for monitoring butterflies on lantana plants growing outside

their potter's shed during the summer of 2015 and for conversations on the history and biology of the Shearwater site; Heather Rumfelt (Director of Education, WALTER ANDERSON MUSEUM OF ART, 510 Washington Ave., Ocean Springs) for information on transportation to Horn Island; Danny Jalanivich (Harbor Master, OCEAN SPRINGS SMALL CRAFT HARBOR, 1310 Harbor Rd.) and his son, Daniel, for providing transportation to and from Horn Island and for sharing their personal experiences of the island with me; Bill Barley (Lead Ranger) and Ronda Harper (Law Enforcement Ranger for Horn Island), GULF ISLANDS NATIONAL SEASHORE, MISSISSIPPI DISTRICT, Park Rd. off U.S. Hwy. 90, National Park Service, U.S. Department of the Interior, Ocean Springs, MS for providing information on Mississippi's barrier islands and the 2016 monarch migration on Horn Island; Larry and Rose Mary Ward (GULF HILLS RESIDENTIAL COMMUNITY, Ocean Springs) for guiding me about their extensive wildlife friendly landscape; receptionists at GULF HILLS HOTEL & CONFERENCE CENTER (13701 Paso Rd. off Washington Ave., Ocean Springs, for assistance with my accommodations; Connie (John) Roan (DAUPHIN ISLAND WELCOME CENTER) for excellent information on butterflies of Dauphin Island; employees at THE ESTUARIUM (Dauphin Island) for information pertaining to butterflies in their extensive outdoor exhibits with native plants and *Lantana camara*; Richard L. Brown (Director, MISSISSIPPI ENTOMOLOGICAL MUSEUM, Mississippi State University, Mississippi State in Starkville, MS) for providing data from the museum's holdings; Ricky L. Patterson (Vicksburg, MS) for providing his personal butterfly records for Mississippi; Tim Pauls (Photographer, SHIP ISLAND EXCURSIONS, Gulfport, MS, and colleague, "Kevin," for providing a print and a digital image of me to document my Wednesday October 20 trip to West Ship Island.

Fig. 62. Tall goldenrod (*Solidago*) along ditch and road on western end of Dauphin Is. Most houses on this end are barely above sea level and occupied only as summer and holiday rentals. Because the island is migrating westward, the west end has expanding beaches and marshes.

Fig. 63. Another view of residential housing on the western end of Dauphin Is.

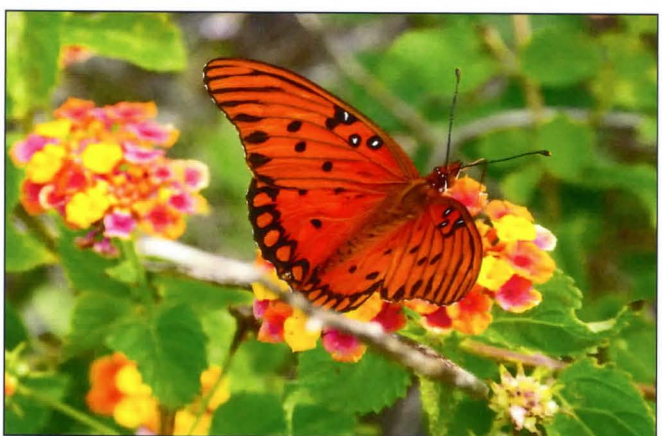

Fig. 64. Gulf fritillary (*Agraulis vanillae*) on lantana, THE ESTUARIUM, Dauphin Is. *A. vanillae* was the most common species on the island as well as most other study sites.

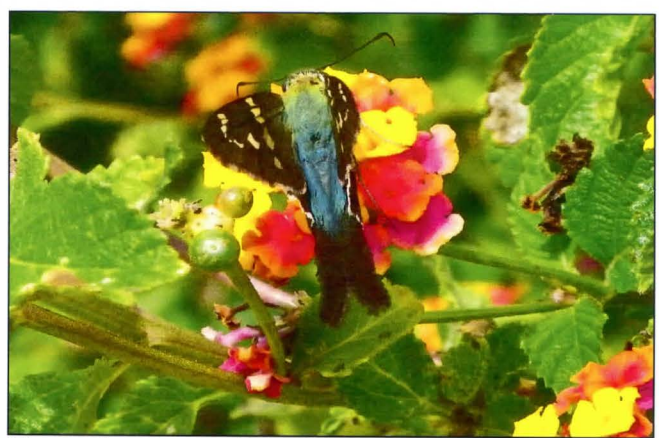

Fig. 65. Long-tailed skipper (*Urbanus proteus*) on lantana, THE ESTUARIUM, Dauphin Is.

Fig. 66. Monarch (*Danaus plexippus*) on lantana, THE ESTUARIUM, Dauphin Is.

67. Dew-speckled anterior wing of Gulf fritillary (*Agraulis vanillae*) in a spider nest. West end of Dauphin Is. Spider nests were common in the low marsh - beach vegetation. The arachnids are major predators of butterflies.

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ACRONICTA AFFLICTA GROTE (1864) (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

Fig. 1. ***Acronicta afflicta*** phenotypes: a-v, all from St. Tammany Parish, Louisiana.

The very abundant and highly variably marked and colored noctuid moth ***Acronicta afflicta*** Grote (Fig. 1) occurs very commonly across the state. Forbes (1954) listed the range from Montreal, Quebec to Florida, west to Wisconsin, Rocky Mountains, and Mexico, in the months June to August, March in the south, and larva on oak. Covell (1984) stated range to include Nova Scotia to Florida, west to Wisconsin and Texas, in two or more broods, foodplants as oaks and walnut, and locally common in Kentucky. Heppner (2003) listed the range and foodplants same as Covell, but adults occurring in the months January to May, September, October, and December. Knudson & Bordelon (1999) listed ***afflicta*** for the state of Texas.

In Louisiana, ***afflicta*** appears to have four annual broods (Fig. 2). Adult specimens have been captured in all months January to November. The thirteen parish records are illustrated in Fig. 3.

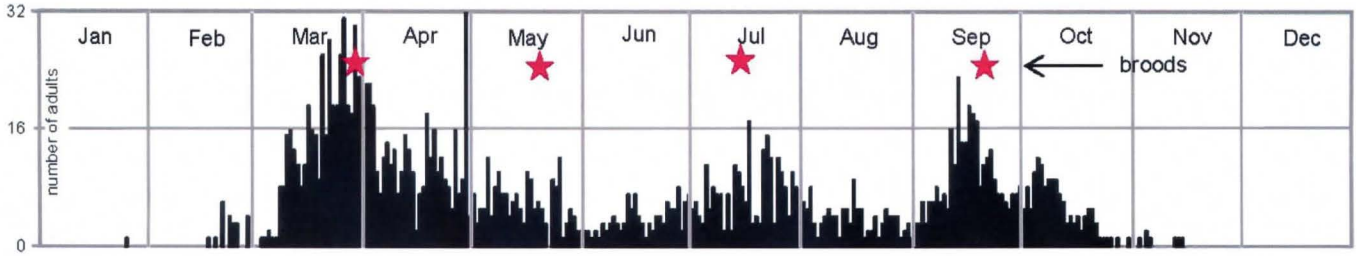

Fig. 2. Adult ***A. afflicta*** captured in Louisiana. n = 1880

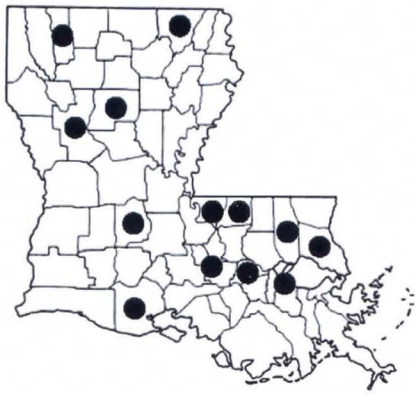

Fig. 3. Parish records for ***A. afflicta.***

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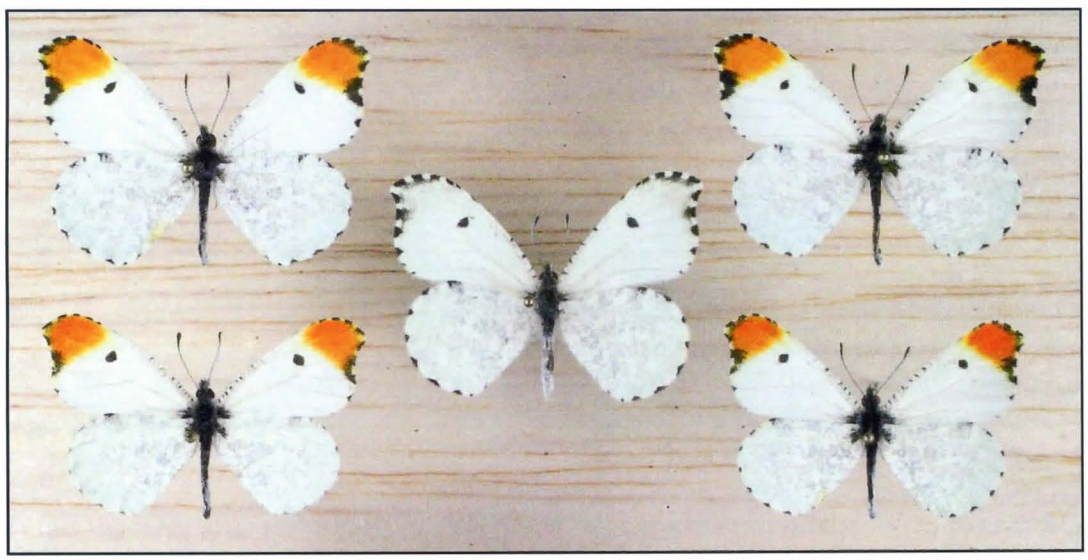

Falcate Orangetip (*Anthocharis midea*) - 4 males, 1 female, Abilene State Park, near Abilene (Buffalo Gap), Texas (March 12, 2016)(Texas Parks and Wildlife Department, Permit No: 01-05 to JB Lombardini)

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VISITING THE SMITHSONIAN INSTITUTION'S MUSEUM OF NATURAL HISTORY (NMNH) ENTOMOLOGY COLLECTION

BY

F. MATTHEW BLAINE

I am a member of the entomological Society of Washington and as a result I was invited to attend a conference titled: Invasive Insect Species: Pestering Our Economy and Environment. It was held in Washington, DC, at the Rayburn House building on 23rd April 2014. At that meeting I met Floyd Shockley, Ph.D., F.R.E.S., (further referred to as Floyd), who was and is the acting director of the U.S. National Museum of Natural History (NMNH) Entomology Collection. The collection is currently housed at the Smithsonian Institute's NMNH building and at other facilities in the Washington, DC, area. At the invasive species conference I asked Floyd if I could visit the museum with my wife and see the Entomology Collection. He said he would be glad to give us a tour, just e-mail him to set up a date. We picked June 12, 2014, for our visit.

This is the story of that visit and a subsequent visit on April 12, 2016, and our, (Citizens of the United States), fantastic collection. The US National Insect Collection is one of the largest entomological collections in the world with over 35 million specimens which are housed in 132,354 drawers, 33,000 jars and vials, and 23,000 slides with more than 5,200 cabinets as reported in 1976 [a].

Now for a little history:

The National Museum was established in 1842. The Smithsonian Institution was founded in 1846. In 1878 Entomology became a Division and the famous Missouri Entomologist, C.V. Riley was appointed "Honorary Curator" which meant without pay. In April, 1879, Riley resigned after a disagreement with the Commissioner of Agriculture. He was succeeded by Professor J. H. Comstock of Cornell University. Comstock left in 1881 after a change in administration and returned to Cornell University. Reenter Riley who was appointed Honorary Curator of Insects by the Museum. He held that position until his accidental death in 1895. In 1881 after his return, Riley placed on deposit his own huge collection. Eventually he formally donated his collection after he was convinced that more support would be given from the museum to the Entomology Department. The Lepidoptera collection is just one of 25 collection groups that are now established [a, c].

An excellent and detailed account of the evolution of the museum and collections is available in the publication The United States National Entomological Collections which is available on line [a].

Today the Lepidoptera collection section currently has approximately 7,000,000 specimens [b].

On Thursday, June 12, 2014, after an excited restless night's sleep, we drove across the Chesapeake Bay Bridge toward Washington, DC. We would leave our automobile next and take the Metro system downtown for our appointment at the Security Office in the Natural History Building of the Smithsonian. There we would pick up our guest's passes and Floyd would meet us to give us a tour. Floyd took us up through the myriad of halls and passage ways beginning our tour (Fig.1). He

Fig. 1. Our gracious host with Dona standing in front of one of the many long isles of cabinets.

explained how the most recent part of the building where much of the insect collection is housed was recently built inside of the Natural History Museum. Originally the Museum building was built with two courtyards enclosed inside of the structure. There was a need for more space and a law that only existing buildings could remain on the Concourse. To add to the structure they used one of the courtyards that had originally been left in the building to keep the architecture of the outside of the building unchanged. Now to get from the old section to the new section you take a bridge between structures but everything is under a cover. Because the roof height of the new building is shorter than that of the older surrounding building, when you walk across the bridge leaving one floor level behind you enter a different floor level (Figs. 2, 3).

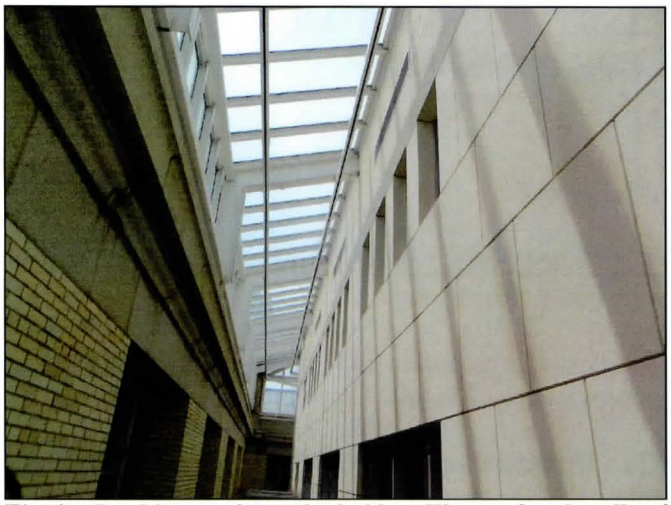

Fig. 2. Looking up from the bridge. The roof and walls of the new and old sections.

Fig. 3. looking down one can see several floors with windows. The ones in the old section are not in sync with the ones on the right (new section).

Fig. 4. Floyd explains the layout and locations of the many collections to Dona.

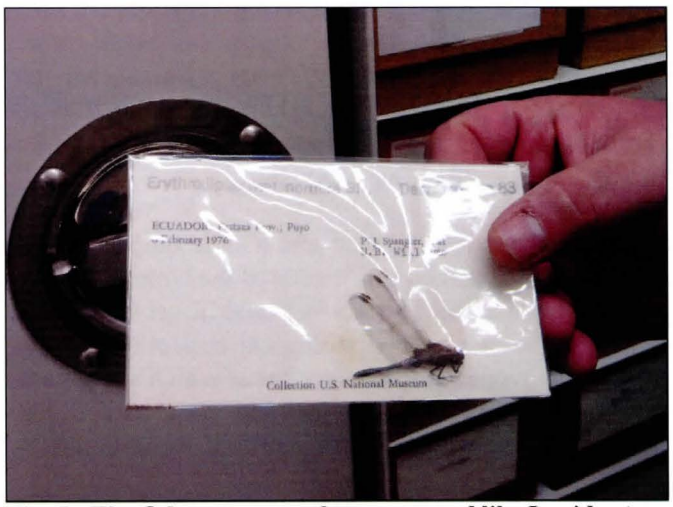

Fig. 5. The Odonata are no longer spread like Lepidoptera but kept on file size cards with data to conserve space.

Fig. 6. The cards are kept in boxes.

Fig. 7. The boxes are stored in cabinets.

Floyd gave us a comprehensive and detailed tour of the many collections housed there with detailed explanations (Fig. 4). First we were shown the Odonata stored in cabinets using cards instead of pinning and spreading each specimen (Figs. 5 - 7). The next area was the newly constructed wet collection facilities which have positive air pressure to remove any fumes (Figs. 8 - 10).

Fig. 8. The new Wet Storage Area.

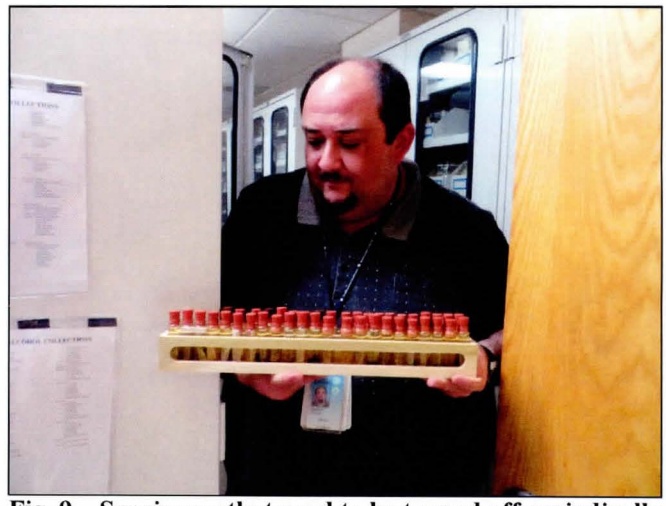

Fig. 9. Specimens that need to be topped off periodically to refresh alcohol that has evaporated.

Fig. 10. Specimen vials within jars all containing alcohol to slow down loss due to evaporation.

Fig. 11. Floyd standing at the entrance of the main hall of Lepidoptera treasures.

We reach the Lepidoptera collection as Floyd explains that the irreplaceable types are in one designated corner on each floor so in case of an emergency the staff can evacuate them to safety (Figs. 11 - 13). We walk down the corridor and open a few cabinets which I photographed after removing the glass lids to avoid reflection. Here we meet Lepidoptera Specialist, Brian Harris, who is holding a tray of *Agris* species that have recently been donated to the collection. The males of this species have tufts of hairs on their wings unlike any other butterflies (Fig. 17). They are from Mexico, South and Central America and have become very collectable. German Lepidopterist Hans Fruhstorfer described them as a "princely race" of the Nymphalidae (Figs. 14 - 16) [d, e].

We continued to photograph treasures from the Lepidoptera collection spending over an hour looking at drawer after drawer of Lepidoptera (Figs. 18 - 21). Next Floyd showed us one of the rarest specimens that are in the holdings. He explained that there are only three examples of this *Xanthopan morganii* with its long proboscis uncoiled at the Smithsonian. These are from Madagascar. This one is housed in a Riker mount to protect the proboscis.

When Charles Darwin was studying insect pollination of orchids in 1862 he received a shipment of orchids from Madagascar sent by the distinguished horticulturalist, James Bateman. The shipment

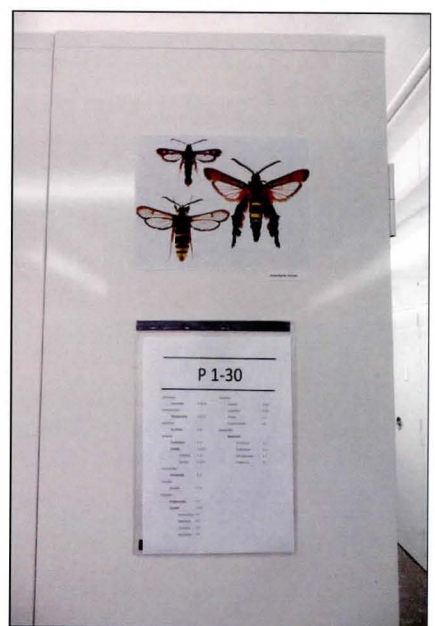

Fig. 12. On the end cabinets photographs printed on magnetic paper show what is in the isle with the printed description below.

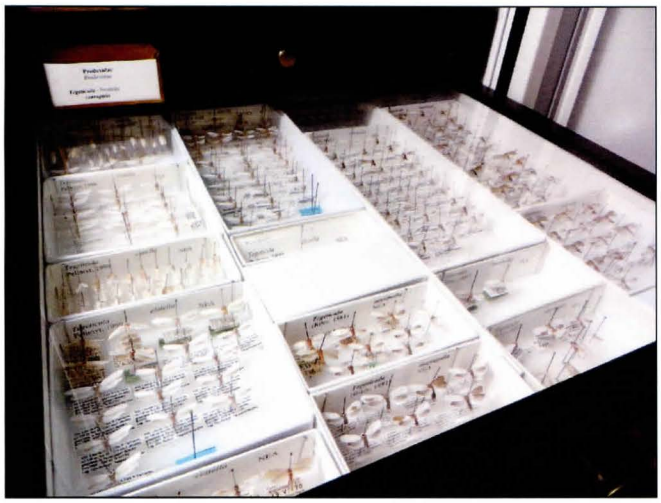

Fig. 13. A drawer of *Tegelicula* Species.

Fig. 14. Brian Harris holding a drawer of colorful *Agrias* specimens.

Fig. 15. *Agrias* specimens.

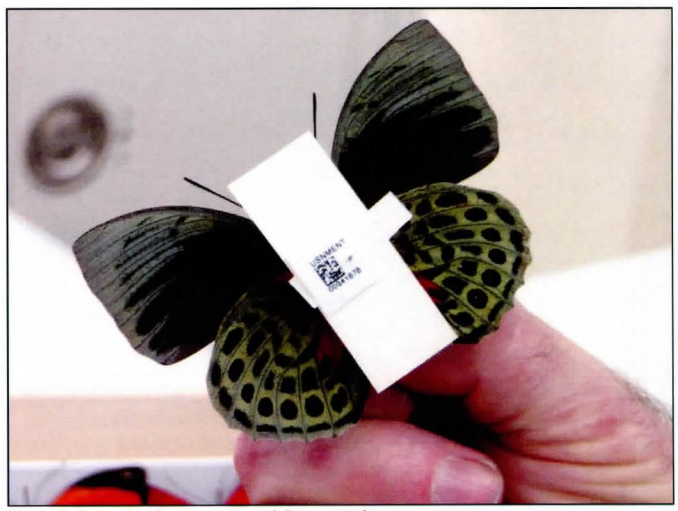

Fig. 16. *Agrias* underside specimen.

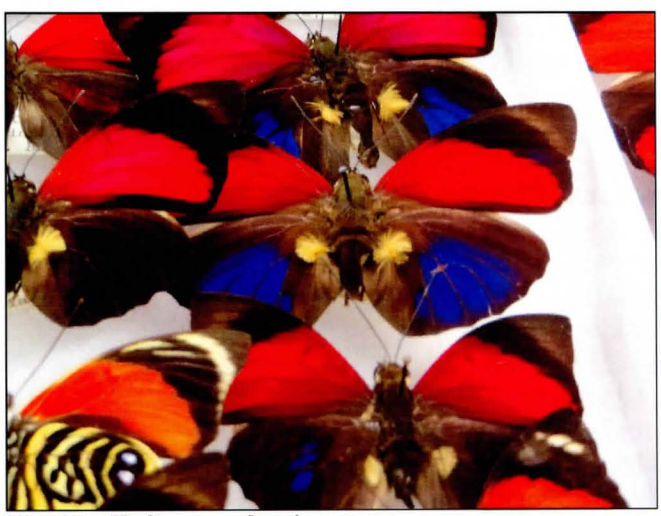

Fig. 17. Tufts on male wings.

Fig. 18. Crysalis of *Agria*.

Fig. 19. *Ornithroptera victoriae*, *Papilio (Princeps) antimachus*, and others.

Fig. 20. A drawer of Gynandromorphs.

Fig. 21. A drawer of spectacular diurnal moths.

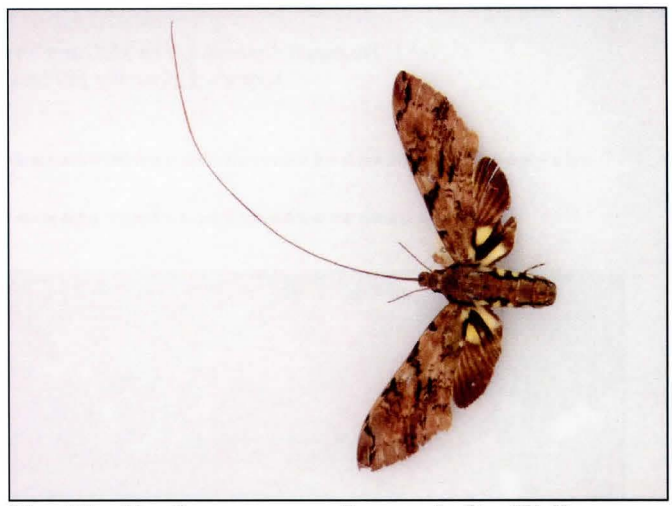

Fig. 22. *Xanthopan morganii* named after Wallace.

contained specimens of *Augraecum sesquipedale.* Darwin was astonished by the extraordinary length of the nectary and reportedly said to Joseph Hooker, "I have just received such a box full from Mr. Bateman with the astounding *Angræcum sesquipedalia* with a nectary a foot long — Good Heavens what insect can suck it?" Eventually Darwin predicted that there must be a moth with a proboscis long enough to reach the nectar and while pushing it's proboscis it's head would get pollen on it. When the moth did the same to the next flower it would deposit pollen from its head. Alfred Russel Wallace wrote an article a few years later predicting its existence supporting Darwin. In 1903 when *Xanthopan morganii* was discovered in Madagascar it was named after Wallace but not Darwin as subspecies *Xanthopan morganii praedicta* by Rothschild & Jordan for his prediction. Darwin was left out because he predicted a large moth and not a hawk moth! Later the subspecies was declared invalid because it is identical to *Xanthopan morganii* found on the mainland of Africa (Fig. 22) [(e)].

My final request was to see an insect that I have read about and I have wanted to see in specimen form, the Japanese Giant Hornet *Vespa mandarinia japonica.* Floyd was able to find a drawer of *Vespa mandarinia* which would have to do. What a magnificent creature (Fig. 23).

Fig. 23. The giant *Vespa mandarinia* in hand!

Many thanks to Floyd Shockley for providing us with two outstanding tours and for his generous expenditures of time and effort to accommodate me and my many questions.

Acknowledgements and Credits

a. The United States National Entomological Collections - http://entomology.si.edu/documents/US NationalInsect Collection 1976.pdf
b. Floyd Shockley PhD. F.R.E.S. (via private communication)
c. Department of Entomology, National Museum of Natural History - https://en.wikipedia.org/wiki/Department_of_Entomology,_National_Museum_of_Natural_History
d. https://en.wikipedia.org/wiki/Agrias
e. Brian Harris, Lepidoptera Specialist

Dona Blaine, Companion extraordinaire, proof reader

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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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Fig. 7.

Fig. 9.

Fig. 8.

Fig. 7. Lavender single form of *P. somniferum.* Single forms close at night, presumably to protect themselves from nocturnal pollinators.

Fig. 8. Close-up of lavender single form of *P. somniferum* with honeybees.

Fig. 9. Pink triple form of *P. somniferum.* Two flower buds flank open flower.

[See article by Gary N. Ross on page 122]

HOST CHOICES OF *CELASTRINA NEGLECTA* (W. H. EDWARDS)(LEPIDOPTERA: LYCAENIDAE: POLYOMMATINAE) IN OKALOOSA COUNTY, FLORIDA

BY

MARY ANN FRIEDMAN

When my husband, Norman, and I decided to buy 43 acres bordering the eastern part of the Blackwater River State Forest in the Florida Panhandle, little did we know the great surprises that lay in store for us. I am interested in Lepidoptera. Norman is a herpetology aficionado.

The property has mixed hardwoods and some pines. A small seepage-fed creek cuts through the property. In the not so distant past, our 82 year old neighbor tells us, this parcel was home to a great stand of Longleaf Pine (*Pinus palustris*). Over the years multiple owners have fenced off portions for livestock, farmed small subsistence type crops, and basically used it as many Northwest Floridians and South Alabamans have done for a couple of hundred years: hunting the deer and turkeys and selling off pines for cash.

When we took possession we were determined to rid the property of non-native invasive species such as Popcorn Tree (*Triadica sebifera*), Chinese Privet (*Ligustrum sinense*), Chinaberry (*Melia azedarach*), Mimosa (*Albizia julibrissin*), and Japanese Honeysuckle (*Lonicera japonica*). More recently our main nemesis has been Japanese Climbing Fern (*Lygodium japonicum*). We are convinced that this scourge will have a major impact on Blackwater River State Forest and private lands in this area. Our attempt to establish some Longleaf Pine has been less than satisfactory.

We have documented 78 species of butterflies on the property over the last 10 years. Several of these have been Okaloosa County records. The only species which does not have photo documentation is the Mourning Cloak, *Nymphalis antiopa*. We have had four sightings of this butterfly, but never with a camera handy. Numerous moth species have been submitted to the Butterflies and Moths of North America (BAMONA) web site (http://www.butterfliesandmoths.org) for documentation as well.

Though Norman has worked his chainsaw to the nubs and has been mostly successful in ridding the property of the major invasive weed problems, we occasionally find something new popping up to cause us concern. We were surprised three years ago to find an attractive robust plant growing along the creek. It looked perhaps like a mint of some type, and a quick search revealed it to be *Perilla frutescens* (Fig. 1), also known as Beefsteak Plant, an import from Asia. Originally cultivated in gardens, Perilla has escaped into natural areas in many places in the Southeast. Perilla appears to be claiming more spots every year along the creek and also seems to be detrimental to surrounding native plants such as Virginia Willow (*Itea virginica*) perhaps owing to allelopathic qualities.

Fig. 1. *Perilla frutescens* Beefsteak Plant

My initial response to this invader was tempered by the fact that Summer Azures (*Celastrina neglecta*) seemed to be very attracted to the blossoms. In 2015 I watched several females ovipositing on the buds during the month of July (Fig. 2). I removed four of the eggs to rear them.

The images show the developmental stages (Fig. 3-11). All four immatures reached the pupal stage. Two adults eclosed perfectly. One was released back at the property, but the other died almost immediately after emerging though it seemed to be in perfect condition. The third adult emerged well, but the wings never hardened properly and through it took nectar, it was

Fig. 2. *Celastrina neglecta* ovipositing on *Perilla frutescens*

Fig. 3. Vacant egg case

Fig. 4. Larva with shed cuticle

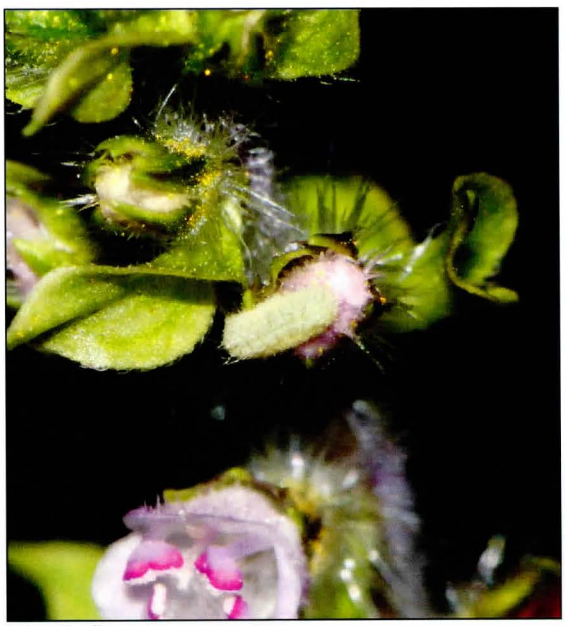

Fig. 5. Larva

unable to fly. The fourth pupa desiccated and did not produce an imago.

On the Perilla plants in the wild, the larvae were attended by ants. There were at least two species of ants present on the Perilla, but those I saw actively attending the larvae were *Nylanderia faisonensis* (Fig. 12). The second ant species, *Pheidole dentata,* did not appear to interact with the caterpillars.

I have been rearing *Celastrina* larvae for several years in an attempt to figure out the local host plant preferences. Laurel Cherry (*Prunus caroliniana*) and Black Cherry (*Prunus serotina*) support *Celastrina neglecta* larvae throughout the spring and Devil's Walking Stick (*Aralia spinosa*) and Sourwood (*Oxydendrum arboreum*) during the summer on our property. I have also observed several female Azures (probably *C. neglecta*) ovipositing on Tropical Bushmint (*Cantinoa mutabilis*). However, rearing these larvae was unsuccessful as none of the larvae thrived on the Bushmint.

In 2012 I witnessed *C. neglecta* oviposit on Swamp Dogwood (*Cornus foemina*) in Liberty County (Fig. 13-14). Reading the larvae solely on this shrub was unsuccessful due to the lack of available buds of this species nearby. One of these larvae completed its life cycle on Sourwood when we ran out of Swamp Dogwood, and was released to the location of origin.

Fig. 6. Larva and vacant egg case

Fig. 7. Larva becomes patterned with chevrons

Fig. 8. Later instar shows darkened markings

Fig. 9. Pre-pupa

In warm years *C. neglecta* adults begin to emerge in early January in our area. One very early Azure was observed flying on New Year's Eve, December 31, 2011. I have photographed females as early as January 29 ovipositing on Laurel Cherry buds.

In our area we also experience a spring flight of *Celastrina ladon*, but we have not yet documented the local host plant for this species. The literature suggests that *C. ladon* would use Flowering Dogwood (*Cornus florida*). If this is the case the dogwood anthracnose disease, which has decimated much of our Florida Dogwood will certainly have an effect on the survival of *C. ladon* in our area.

I would like to thank David Wright and Marc Minno for their ongoing expert guidance and Brooks Atherton for identifying the ants. Additional gratitude to Marc Minno for review and edits.

(Article continues on the next page.)

Fig. 10. Pupa

Fig. 11. Adult

Fig. 12. Ant attending larva

Fig. 12. is expanded to better show ant attending larva

Fig. 13. *Celastrina neglecta* ovipositing on *Cornus foemina*

Fig. 14. Egg on *Cornus foemina* bud

(Mary Ann Friedman, E-Mail: marsabones@hotmail.com)

TO ATTRACT EARLY SPRING POLLINATORS TO YOUR GARDEN, UP THE ANTE

BY

GARY NOEL ROSS

In the Gulf South, Spring rushes in, rushes out. And within this blink of an eye, the annuals and perennials in our gardens bloom their hearts out. Here in southern Louisiana, rank and file flowering plants that are traditionally incorporated into spring gardens have centered on pansies (*Viola* hybrids), violas, petunias (*Petunia* hybrids), snapdragons (*Antirrhinum*), and pinks (*Dianthus*). All have proven records. However, these species have only limited capacities to provide early season pollinators (principally honey and bumble bees, for instance) with their primary needs for pollen after winter inactivity has exhausted reserves. Those nectar-seeking species (butterflies and moths, for examples) have to search out natural areas, pastures, and orchards for alternative nectar-rich banquets.

Over the past several years, I have tried to "think out of the box." My garden fronts the sidewalk. The setting is large: approximately 2000 square feet composed of loose, slightly acidic soil. I have experimented with a host of little-known species that can produce stellar performances, albeit ephemeral. Species that have caught my attention are: California poppy (*Eschscholzia californica*), Shirley poppy

Fig. 1. Overview of front garden from elevated position. Red flowering plants are the common garden poppy (*Papaver somniferum*). Blooms begin in mid to late March and end in late April. Red forms bloom first, other colors follow. Accent pots contain "Wave Petunias."

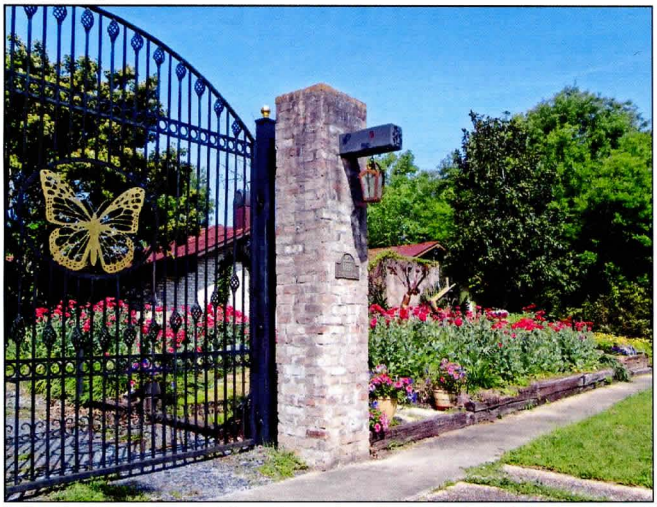

Fig. 2. Overview of front garden from gated driveway and sidewalk.

Fig. 3. Lavender double form of *P. somniferum*. All color varieties attract bees. Lavender forms bloom late—usually mid to late April.

(*Papaver rhoeas* hybrid), and common garden, aka, breadstick, and opium poppy (*Papaver somniferum*), larkspur (*Delphinium*), "Diamond Blue Delphinium," foxglove (*Digitalis*), ornamental tobacco (*Nicotiana*), columbine (*Aquilegia*), and monkey flower (*Mimulus*). The key to success with these marginal, more Northern adapted species is to plant early, say the middle to the end of October. New seedlings will remain rather quiescent throughout the winter. During this period, however, they are establishing strong, fibrous root systems. But then in late February or early March, the above-ground vegetation will begin to bolt. This is now the time to fertilize heavily with a liquid fertilizer ("MiracleGro" does wonders) to stimulate growth. The plants will produce flowers spanning a four-to-five week period, each blossom lasting only at most, three to four days. The blooming period ends when temperatures begin to exceed 80 degrees F. Then the plants wilt, dry, and die. At this point, the annuals must be discarded and replaced with more heat tolerant species.

Of the species that I have trialed, the common garden poppy, *Papaver somniferum*, has proven to be both the most showy and the most pollen rich. [NOTE: Even though *P. somniferum* is indeed the source of raw opium trade abroad, the Drug Enforcement Agency or DEA does not concern itself with homeowners who plant small amounts of this poppy in their residential landscapes for aesthetics and seed production for the culinary arts. In fact, the tiny, highly viable seeds are readily available from the internet or as "pass-alongs' from friends. Young plants are often carried by local garden centers. Additionally, in spite of what was promulgated in the popular and mythical "The Wizard of Oz," these flowers do not cause anyone in their vicinity to fall into a deep sleep.]

Below is a summary of the reasons I consider *P. somniferum* to be the quintessential plant for cool-season gardens in the Deep South, and even other parts of the country:

1. Each plant produces an average of 8-10 flowers (I have countered as many as 14 on several plants).

2. Flowers are visually stunning, but persist for only 2-4 days. Each flower is large (4-5 inches across), colorful (red, rosy pink, pale pink, mauve, lavender—red varieties bloom first, purple second, pink next, and lavender, last), and varies in form between open silky 4-5 petal types to doubles and triples with compact and elongated petals (the latter look similar to large carnations and chrysanthemums, or a "pom-pom on a stick");

3. Petals of each flower are arranged around a bulbous central ovary (female portion of flower) that is topped with a spider-like stigma for collecting large volumes of pollen. Ovary contains 2000-3000 ovules, which when fertilized, will become tiny seeds for the next generation. Seeds can remain viable for up to five years under refrigeration;

4. Each flower sports 100-200 anthers (tips of stamens, the male portion of a flower). Stamens are arranged in a whorl within the petals and flank the central ovary. Each anther can release thousands of grains of yellowish pollen (equivalent to animal sperm);

5. Mature seeds are released through openings beneath the protective stigma (now crown-like). Seeds are reported to have an extremely high fertility rate (at least 95%).

6. Flowers lack nectaries (nectar-producing organs). Seems as if during the evolutionary history of the Papaveraceae—the family of poppies—natural selection favored those plants that developed the capacity to produce large numbers of pollen-producing stamens. This, of course, committed poppies to attracting those insects that can gather large amounts of pollen for both self and or cross pollination. Furthermore, since bees (and flies) often are the most efficient insects at gathering massive amounts of pollen, natural selection favored flowers that would remain open only during daylight hours when these pollinators are active. (You can check this out by observing your single-form poppies near dusk. Double/triple cultivars, however, are just too massive to close. These forms, however, are somewhat protected at night because their stamens are buried within the myriad petals, ergo, difficult to locate.) The outcome of eons of evolution is that poppies have come to rely primarily on bees (and perhaps even small flies) for their propagation.

Every morning when my garden is in full bloom, I am treated to the hum of hundreds of frenetic honeybees collecting pollen. Counting as many as five bees on a single flower is not uncommon. Then by early afternoon, activity slows as the bees return to their hives (I have never identified this venue) to deliver their "pot of gold." I have concluded that the dynamics between *P. somniferum* and honeybees provides us gardeners with a masterful education in evolutionary adaptation, insect behavior, and the value of planting pollen-rich flowers for cool-season gardens (see References). And in today's world, when honeybees are experiencing what has been termed "Colony Collapse Disorder" or CCD, pollen-rich flowers are particularly crucial and should be a major concern for gardeners.

But if you wish to add *P. somniferum* to your cool-season garden, be prepared for some disappointments. Consider: the species is native to the relatively dry, rocky regions of the Middle East — especially Turkey. As such, the plants have a shallow root system that does not lend much support to the vegetative growth, which can top out at 3-4 feet. Additionally, single forms sport petals that are paper thin, silky. Because of this delicate nature, petals are easily damaged by rain drops (not to mention hail stones!). And another weak point: double/triple forms are so top-heavy that they are easily blown over by wind. Bottom line: A thunderstorm (quite common in the springtime) can lay waste to your months of work. To counter these high risks, I plant large numbers of poppies. That way, I am assured that some plants will always escape damage from inclement weather.

[**POSTSCRIPT:** If you are very ambitious and have the space, you can augment your spring annuals with species that bloom a bit later, say May, and don't have to be planted until late winter. These include: sunflower (*Helianthus*), black-eyed-susan (*Rudbeckia*), and tickseed (*Coreopsis*). Some of these produce high amounts of both pollen and nectar, and so are good for butterflies.]

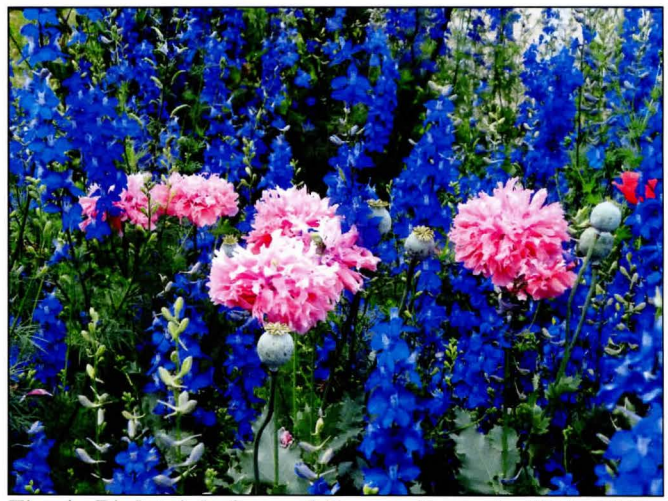

Fig. 4. Pink triple form of *P. somniferum* in field of blue larkspur (*Delphinium*).

Fig. 5. Bed of monkey flowers (*Mimulus*). Species is sensitive to frost.

Fig. 6. Shirley poppy, a cultivar of the common field, corn, or Flanders poppy (*Papaver rhoeas*) of Europe.

Fig. 7. Pansies flanked by monkey flowers (*Mimulus*).

Fig. 8. Group of monkey flowers (*Mimulus*).

Fig. 9. Close-up of white monkey flower (*Mimulus*).

Fig. 10. Close-up of pink monkey flower (*Mimulus*).

Here are sample photos taken between April 7-23, 2016, in my garden in Baton Rouge. The 2015-2016 season witnessed the introduction of monkey flower (*Mimulus*), a native of several western states. The plants proved to be the most sensitive to cold of any of my autumn plantings. In fact, I had to cover the plants with a tarp whenever temperatures dipped to 32 degrees F. or lower. That said, *Mimulus* produced a profusion of showy flowers that proved attractive to honeybees and bumble bees.

ACKNOWLEDGEMENTS

My special thanks to FRANK ZACARIAH WILDFLOWERS for assistance with preparing my flower beds and planting for the 2015-2016 season.

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(Gary N. Ross, E-Mail: GNROSS40@yahoo.com)

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ACRONICTA HASTA GUENÉE, (LEPIDOPTERA: NOCTUIDAE) 1852 IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

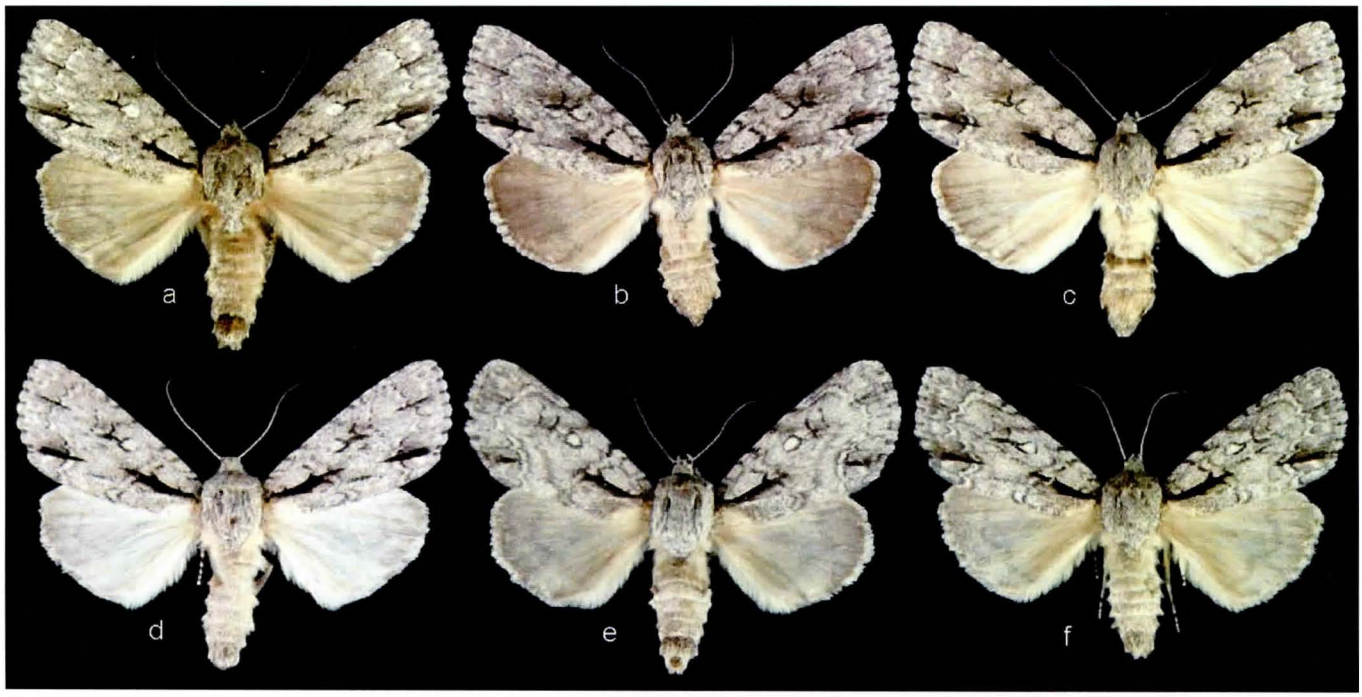

Fig. 1. ***Acronicta hasta*** phenotypes (a-f), St. Tammany Parish, Louisiana.

Acronicta hasta Guenée (Fig. 1), is a fairly common and widespread medium-size species of the genus. Forbes (1954) listed ***hasta*** in the US from Maine to Tennessee to Wisconsin and Kansas and in Canada as race ***manitoba*** Smith from Ontario and from Manitoba to Alberta, listed it as having apparently two broods and feeding on wild

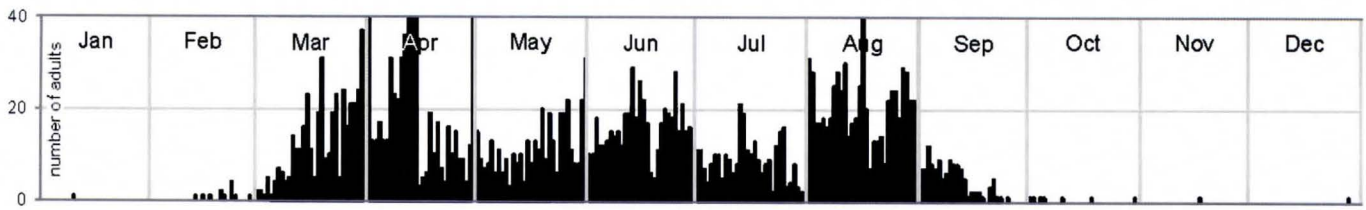

Fig. 2. Adult ***Acronicta hasta*** captured in Louisiana. n = 2902

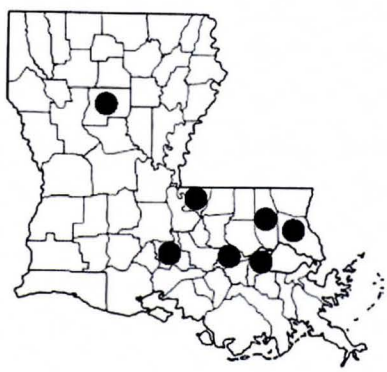

Fig. 3. Parish records for ***A. hasta.***

cherry. Covell (1984) stated the range of ***hasta*** to include Maine and Ontario to Florida, west to Wisconsin, Kansas, Arkansas, and Mississippi, April-September, in at least two broods, and the foodplant is wild cherry. Heppner (2003) listed the range to be Ontario to Florida and Wisconsin to Texas in March-May and July-August. Knudson & Bordelon (1999) listed ***hasta*** for the state of Texas. Within Louisiana, adult ***hasta*** have been captured using ultraviolet light traps for the past 46 years, and adult specimens have been taken in all 12 months (Fig. 2). ***A. hasta*** appears to have at least three annual broods peaking in April, June, and August.

The parish records are illustrated in Fig.3.

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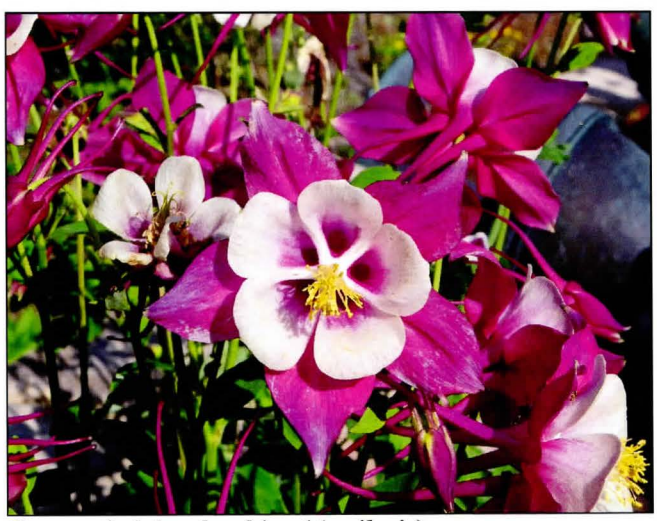
Stalk of pink foxglove (*Digitalis*).

Stalk of purple foxglove (*Digitalis*).

Pink triple form of *P. somniferum* with foxglove (*Digitalis*) and Shirley poppy (*Papaver rhoeas* hybrid) in background.



Group of pink columbine (*Aquilegia*)

Close-up of yellow columbine (*Aquilegia*)

[Photographs are by Gary N. Ross - his article is on page 122.]

DISCOVERY OF A LONG STANDING COLONY OF ZEBRA SWALLOWTAIL *PROTOGRAPHIUM MARCELLUS* (CRAMER, 1777) EXTANT IN SUSSEX COUNTY, DELAWARE

BY

F. MATTHEW BLAINE

Since the 1970s I have been trying to catch a Zebra Swallowtail, *Protographium marcellus* (Cramer, 1777), in Sussex County, Delaware in vain. I can remember getting a letter from a researcher back around 1975 asking me if I had any records or sightings for this species. Back then much of Sussex County was farmland or woodland but the past 40+ years much of that land has been converted into vacation homes and housing lots. Retirees from Washington, DC, and surrounding states pour into Sussex County, "the land of pleasant living". The rate of housing construction has drastically increased in the past 10 years spreading west from the beach area along the coast. We do have state parks but they are heavily used resulting in large asphalt parking lots. Camper sites, mowed lawns, and high visitor population compared to the once natural environment has resulted in the loss of habitat. As a result of these observations over the years, I had concluded that Zebras no longer "visit" southern Delaware let alone reside here.

I was about to be pleasantly surprised.

Elton N. Woodbury mentions them in his book *Butterflies of Delmarva* in several places and I quote here: "The Zebra Swallowtail is found in woodlands that contain the Pawpaw, it's only larval food. It is also found in nearby fields and gardens where it searches for nectar sources". He also states: "The range of the Zebra Swallowtail extends westward from northern New Jersey and southwestern New York along the southern edge of the Great Lakes to Minnesota and south to Florida and the Gulf of Mexico ".

Kaufman states in his *Feld Guide to Butterflies of North America*: "absent in most of New England and from the central Great Plains westward". In his map on page 24 he indicates that the Zebra Swallowtail is present throughout the Delmarva Peninsula.

Several years ago in Melbourne, Florida, I saw my first Zebra Swallowtail flying down a semi-wooded path. My heart quickened as I grasped the handle of my net and waited to see if it would continue down the path toward me or flair off into the woods. To my delight it did continue down the path and became my first and only Zebra Swallowtail catch to that point. It only took me 39 years to catch my first one.

Last summer I was talking to an old friend, Don

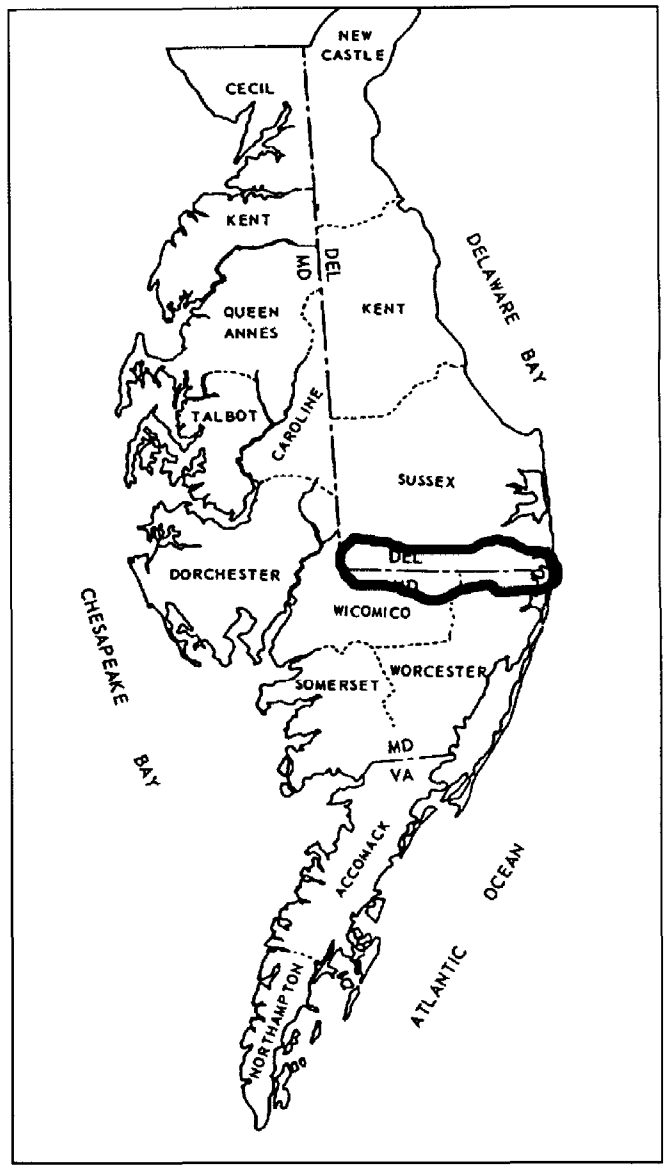


Fig. 1. The general location of the Zebra Swallowtail location.

Fountain, a renowned wild turkey hunter and outdoorsman, at the local lumberyard. He asked me what I have been doing now that I am retired. I explained to him that I finally have time to work on my long-term interest of studying and collecting Lepidoptera and other insects. He told me that he too had studied entomology and collected insects when he was in college and after he graduated he continued to collect for many years. I found this quite amazing since I have known him for over 40 years but the subject never came up. He told me that he had just seen some Zebra Swallowtail butterflies "the other day" at his favorite private

collecting location. As our conversation continued he asked if I would be interested in visiting the spot where he had seen the Tiger Swallowtails yesterday, and of course I was ready to go. We made plans to meet at a remote location in southern Delaware the next afternoon (Fig. 1).

He gave me detailed instructions how to get to the site on the back roads, dirt roads, through farms, and roads on private land. Fortunately I was accompanied on the trip by my wife Dona who is a great navigator but after several attempts we discovered that we were lost. Many of the roads did not have names and the one that did have a name terminated with large pile of dirt in the middle of the road. This road block ended our ability go farther.

Fortunately I had my cell phone and was able to contact Don and make arrangements to meet him at a location of which I was familiar. From there he would guide us through the maze of dirt roads to his secret location. After about half an hour, Don's car was on the horizon. We were about to plunge into a hidden pristine natural oasis. After another 30 minutes of twists and turns on gravel and dirt roads, we were on a road with total arboreal cover. Butterflies were flying! We pulled off the side of the road, parked the car, got out our net's, and the hunt was on (Fig. 2.). We could see Zebras flying but they were flying very fast and very high. After about 30 minutes I managed to collect my second Zebra Swallowtail in 40+ years of collecting. In another exciting and memorable episode, the three of us were standing in a line about 15 feet apart when a Zebra flew down the road and we each had a chance to try and net it unsuccessfully. It had flown the gauntlet unscathed! By this time it was late and the butterflies had stopped flying so we headed home. I made several trips back to that location in 2015 but only observed a few high flying Zebras.

Fig. 2. Don showing me his secret location on private land (2015).

Fig. 3. Finally a Zebra spotted nectaring!

Fig. 4. Dona on the hunt.

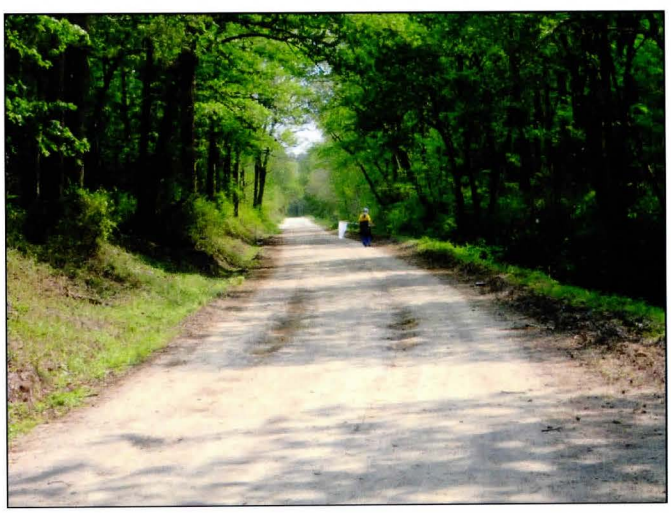


Fig. 5. Dona on the hunt.

Fig. 6. A quick photograph before live release.

Fig. 7. The author after a great day of discovery.

In early May of 2016, I had a message on my answering machine from Don, "Zebras are here"! This message was received on a cold, rainy day which was proceeded by 9 days of the same with only one day that had one hour of sun before the rain began again. I got an e-mail from Don. He had been there for that hour and had caught some Zebras that he gave me the next day. I was determined to see them for myself but once again we had days of rain and cool cloudy weather. One week later the prediction was a day of partly sunny weather on Mother's Day. Sure enough the sun did come out and Dona and I headed out to see if I could remember how to get there using my cryptic notes. We drove down the unpaved roads as Zebra Swallowtails flew up around us from puddles left by many days of rain! Dozens of butterflies were sporadically on the wing while others nectared on small blue flowers along the side of the road (Fig. 3). Dona and I walked down a secluded road and managed to catch a few specimens (Figs. 4, 5). I photographed this Zebra then released it (Fig. 6). I wanted to have a photo record. Later I was able to find some Zebras nectaring and I managed to photograph one. I found the flight pattern of the Zebras erratic when they are nectaring. They rapidly move from one bloom to another bloom seeming to never standing still. This fidgety rapid movement made it quite difficult for me to get the camera focused in time to take a picture. After a beautiful and rewarding day I was ready for the trip home (Fig. 7).

I have decided only to give a general description of the location of this colony to try and insure that it remains viable for the future. Fortunately it is on privately owned property and the owners insist on keeping it in a pristine natural state.

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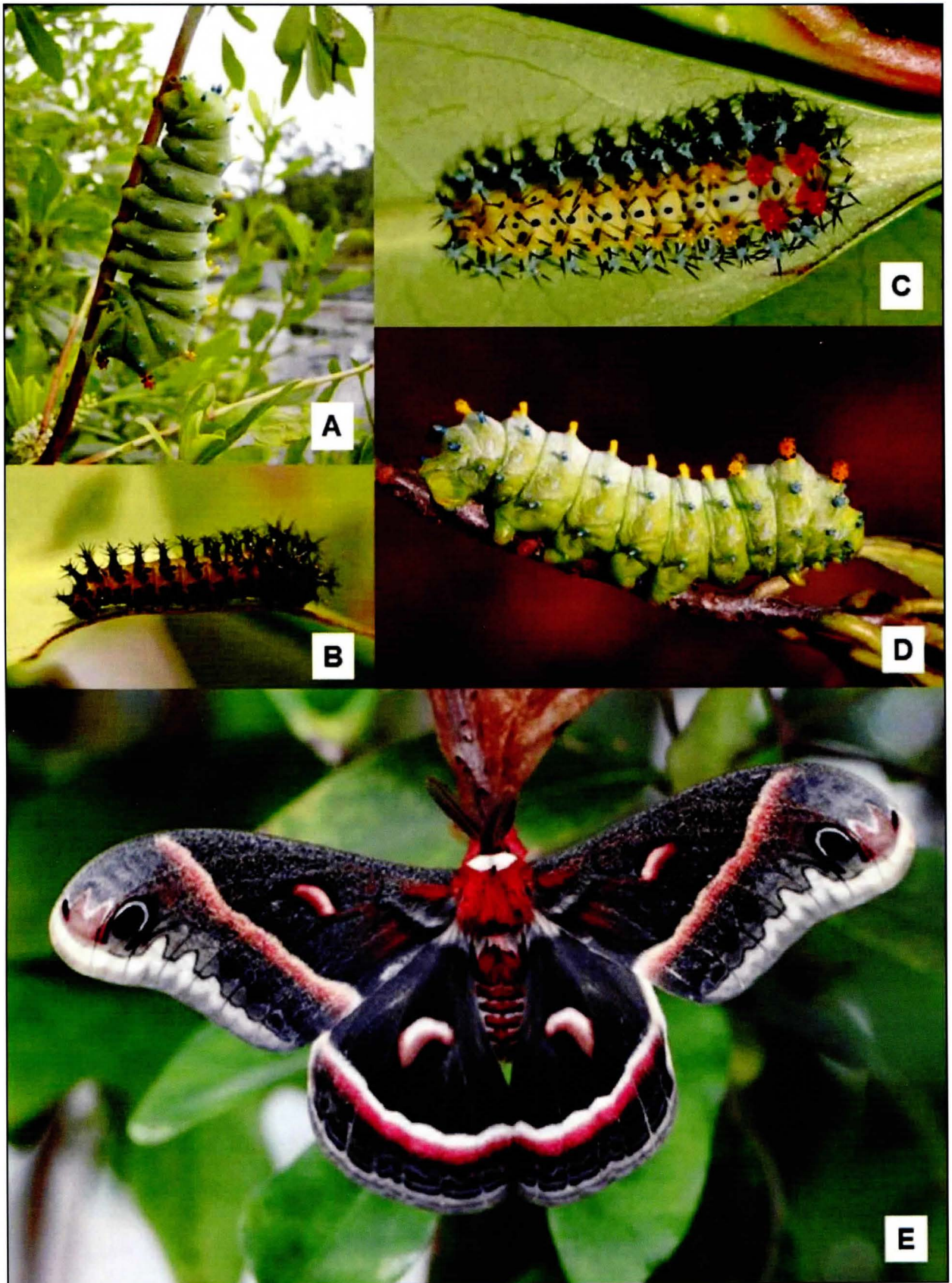

Fig. 1. ***Hyalophora cecropia*** **found on** ***Cyrilla racemiflora*** **in Okaloosa County (A) (photo by M.A. Friedman) and** ***Gordonia lasianthus*** **in Volusia County, Florida (B-E) (photos by M.C. Minno). B) second instar found on April 25, 2011, C) same larva in third instar on April 29, 2011, D) same larva in last instar on June 15, 2011, E) adult male eclosed on March 7, 2012.**

NEW HOST PLANT RECORDS FOR THE CECROPIA MOTH *(HYALOPHORA CECROPIA* L.; LEPIDOPTERA: SATURNIIDAE), IN FLORIDA

BY MARC C. MINNO AND MARY ANN FRIEDMAN

Minno (2011) published observations of some possible host plants of the Cecropia Moth in Florida. We found larvae in the wild on two woody plants that appear to be new host records. On June 22, 2003, we found a last instar Cecropia larva on Titi (*Cyrilla racemiflora* L.; Cyrillaceae) at Eglin Air Force Base, Kepner Recreation Area, Okaloosa County (Fig. 1A on Page 131).

On April 25, 2011, Minno found a young larva on Loblolly Bay (*Gordonia lasianthus* (L.) J. Ellis; Theaceae) near Tiger Bay State Forest in Volusia County (Fig. 1 B). The egg shell was still attached to the same leaf. He reared the larva on leaves of Loblolly Bay (Fig. 1 C-D). The larva spun a cocoon in late June 2011 and the adult male emerged on March 7, 2012 (Fig. 1 E). Volusia County is near the southern limit of the range of the Cecropia moth in Florida.

Both Titi and Loblolly Bay are obligate wetland plants. Titi is a shrub that forms thickets at the edges of wet flatwoods, swamps, marshes, and lakes. It is common in northern Florida, but is of spotty distribution in central Florida. Loblolly Bay is a common tree in swamps with deep organic soils throughout northern and central Florida (Wunderlin et al. 2016).

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Reminder and Call for Papers

FALL MEETING OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY AND THE ASSOCIATION FOR TROPICAL LEPIDOPTERA

28-30 October 2016

The Annual Meeting is scheduled for 28-30 October 2016 and will be hosted in the McGuire Center for Lepidoptera and Biodiversity Conference Room, at the Florida Museum of Natural History, University of Florida. The McGuire Center is located adjacent to Powell Hall on the University of Florida campus and can be accessed directly off 34th St. and Hull Road.

The tentative schedule will include day and night field trips on Friday, 28 October. Formal paper sessions and business meetings will be take place on Saturday and Sunday morning 29-30 October. The banquet will be held on Saturday evening starting at 6:15 pm. Registration forms and a tentative schedule for these meetings will be available on the SLS and ATL websites on or before 1 August 2016. Now is the time to get into the field, make some observations, do some research, and think about presenting a paper or poster at these meetings! If you already have a talk in mind and want to let us know your plans please send us your title and abstract via email to Jacqueline Y. Miller (jmiller@flmnh.ufl.edu) or Debbie Matthews (dlott@flmnh.ufl.edu). We look forward to seeing you in Gainesville!

HOSTS OF THE TEAK DEFOLIATOR MOTH, *HYBLAEA PUERA* (CRAMER) (LEPIDOPTERA: HYBLAEIDAE), IN FLORIDA

BY

MARC C. MINNO AND HANK POOR

Hyblaea puera is a small tropical moth thought to be native from southeastern Asia to India, but it has become established in many other areas of the world including Africa, Australia, Malaysia, New Guinea, oceanic islands such as Fiji and Solomon Islands, Central America (Belize), South America (Surinam), Mexico, and the West Indies (Cuba, Jamaica, Hispaniola, Puerto Rico, and Guadeloupe). The wingspan varies from 2.8-3.2 cm (Covell 1984). The Moth Photographers Group web page (http://mothphotographersgroup.msstate.edu/species.php?hodges=6088) has a range map for North America and the Greater Antilles. Most records (shown as dots on the map) are from peninsular Florida with a few in southern Texas and one each in Georgia and coastal North Carolina.

Robinson et al. list more than 60 reported hosts of *H. puera*, but some of these such as the grass *Panicum maximum* are probably errors. *Hyblaea puera* especially seems to use a variety of plants in the Bignoniaceae, Avicenniaceae, Lamiaceae, and Verbenaceae. These families are all in the order Lamiales. Also reported by Robinson et al. are plants in the Araliaceae, Juglandaceae, Oleaceae, Rhizophoraceae, Dipterocarpaceae, Malvaceae, Combretaceae, Myrtaceae, and Vitaceae. In Cuba, Barro et al. (2011) cite *Spathodea campanulata* as a host plant of *H. puera*.

Kimball (1965) and Covell (1984) reported hosts of *H. puera* observed in south and central Florida to be Sausage Tree (*Kigelia pinnata*), Cape Honeysuckle (*Tecomaria capensis*), tulip tree (most likely referring to African Tuliptree, *Spathodea campanulata*, not *L. tulipifera* since this plant does not occur in southern Florida), and Pink Trumpet Tree (*Tabebuia avellanedae*) in the Bignoniaceae. All of these are nonnative trees and shrubs of tropical affinity that are grown in gardens in Florida.

Heppner (2003) gave these hosts of *H. puera*: Black Calabash (*Enallagma latifolia*), various trumpet trees (*Tabebuia argentea*, *Tabebuia heterophylla*, *Tabebuia impetiginosa*, *Tabebuia pallida*), and *Tecomaria capensis* in the Bignoniaceae and *Liriodendron* sp. (Magnoliaceae), which may be an error based on Kimball's common name.

We greatly appreciate the help of Dr. James Hayden, Curator of Lepidoptera, Florida State Collection of Arthropods (FSCA) at Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) in Gainesville. Dr. Hayden searched the DPI arthropod database for records of *H. puera* and also gathered data from the FSCA larval collection. He found nearly 20 different host plants reported for *H. puera* in Florida (Table 1).

On Oct 5, 2012, Marc Minno found a larva of *H. puera* (Fig. 1) on a six inch tall seedling of Black Mangrove (*Avicennia germinans*) growing in a coastal swamp at Matheson Hammock Park, Miami-Dade County. In April 2015, Hank and Mary Anne Poor found caterpillars of *H. puera* in leaf nests on two *Vitex agnus-castus* bushes planted in the butterfly garden at Fairchild Tropical Garden in Coral Gables (Fig. 2). Matheson Hammock Park is located adjacent to Fairchild Tropical Garden on the north and east sides. They also found one caterpillar on a *Vitex trifolia* 'Purpurea' in another part of the garden. A few of the caterpillars were reared to adults. *Vitex* species have been frequently reported as host plants in other parts of *H. puera*'s range

Young larvae are bluish gray with a black head and pronotum. They feed on the upper leaf surface of the host, skeletonizing the leaves. Last instar caterpillars were usually darker and more variable in color. They chewed leaf edges and tied leaflets and leaves together with silk to make nests. The black and orange colors and communal life style suggests that the larvae of *H puera* are distasteful to birds. In the rearing containers, the last instar larvae tied leaves together with a little silk to make a flimsy cocoon in which to pupate. The reared adults varied in the ground color of the forewings from brown to olive green (Fig. 2).

Of the hosts reported for *H. puera* in Florida, *Vitex* species and Cape Honeysuckle are widely used as ornamental plants in gardens throughout the state and Black Mangrove is abundant in coastal areas of peninsular Florida. In addition, there are likely to be other potential hosts in Florida that remain to be discovered.

Table 1. Host plants of *Hyblaea puera* in Florida based on Florida State Collection of Arthropod specimens and database record searches by Dr. James Hayden.

FAMILY	HOST PLANT
Anacardiaceae	*Schinus sp.*
Bignoniaceae	*Catalpa longissima*
Bignoniaceae	*Crescentia alata*
Bignoniaceae	*Crescentia cujete*
Bignoniaceae	*Enallagma latifolia*
Bignoniaceae	*Kigelia pinnata*
Bignoniaceae	*Tabebuia argentea*
Bignoniaceae	*Tabebuia aurea*
Bignoniaceae	*Tabebuia heterophylla*
Bignoniaceae	*Tabebuia impetiginosa*
Bignoniaceae	*Tabebuia pallida*
Combretaceae	*Bucida buceras*
Ebenaceae	*Diospyros digyna*
Lamiaceae	*Premna corymbosa*
Lauraceae	*Persea Americana*
Meliaceae	*Swietenia mahagoni*
Oleaceae	*Noronhia emarginata*
Verbenaceae	*Vitex parviflora*
Verbenaceae	*Vitex trifolia*

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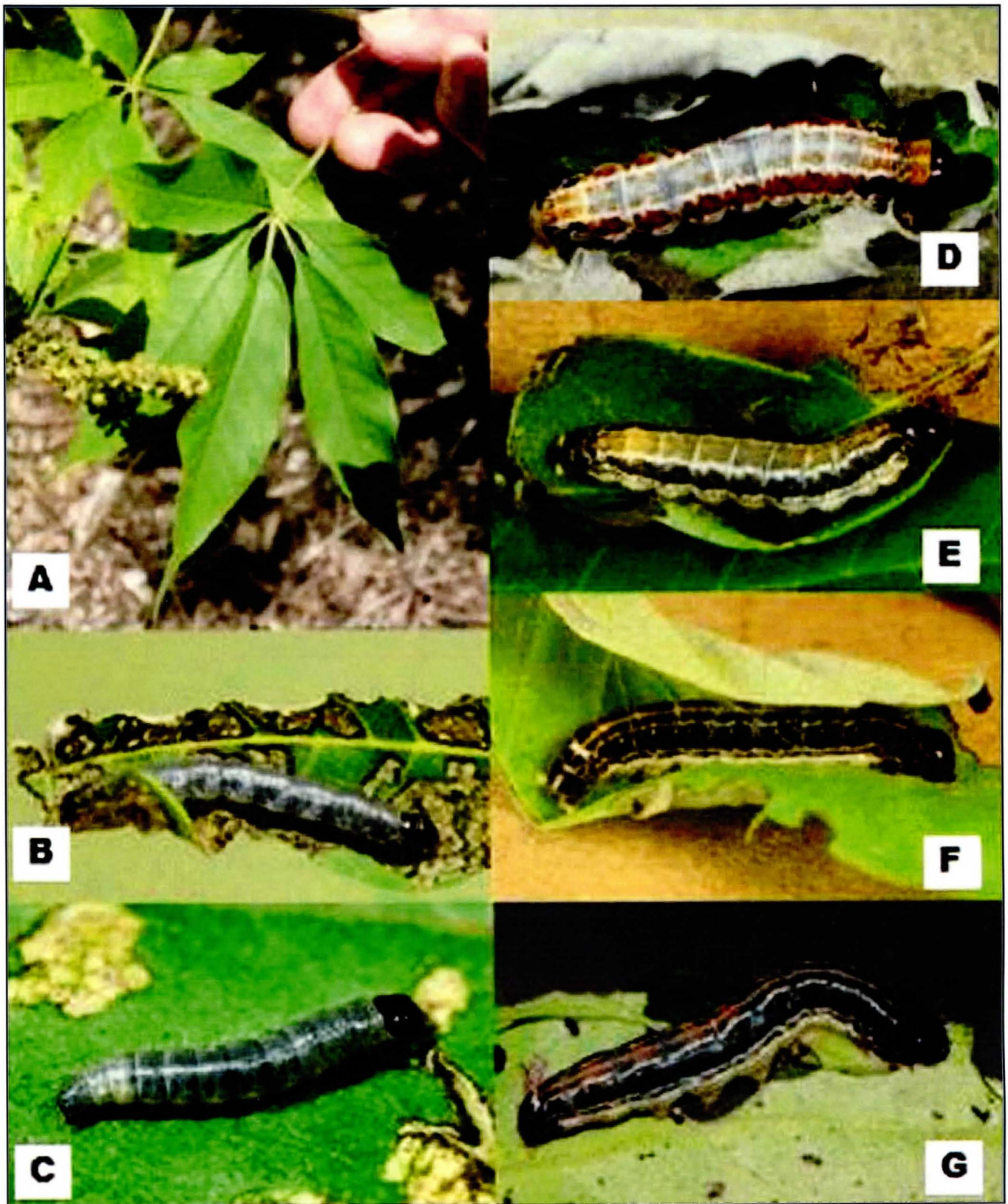

Fig. 1. ***Hyblaea puera*** **biology. A.** ***Vitex agnus-castus*** **host plant. B-C. Young larvae. D-F. Last instar larvae from** ***Vitex*****. G. Last instar larva from Black Mangrove.**

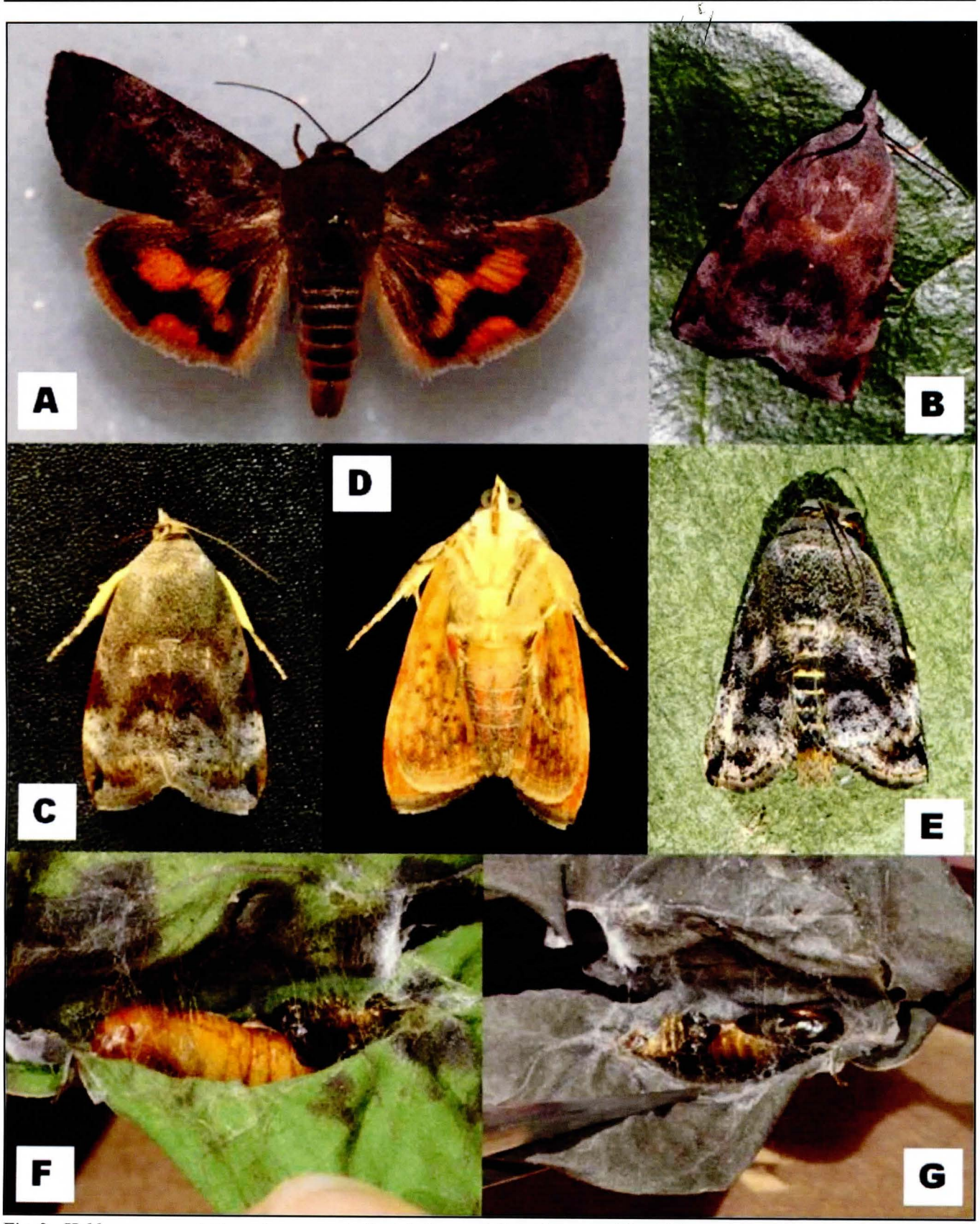

Fig. 2. *Hyblaea puera* adults and pupae. A-B. Adult reared from larva on Black Mangrove. C-E. Adults reared from larvae on *Vitex*. F-G. Pupae in cocoons from *Vitex*.

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

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(Continued from page 79 - Report on the Spring 2016 Field Trip by John F. Douglass.)

Fig. 8. Wherry's Redflower Pitcher Plants (*Sarracenia rubra wherryi*).

Fig. 9. Flowers of *Sarracenia rubra wherryi.*

Fig. 10. Complex hybrid, *Sarracenia leucophylla* X *S. rubra wherryi.*

Fig. 11. Flower of *Sarracenia* hybrid in Fig. 10.

Fig. 12. Parrot Pitcher Plant (*Sarracenia psittacina*).

Fig. 13. Gulf Purple Pitcher Plant (*S. purpurea venosa* var. *burkii* [*"S. rosea"*]).

Fig. 14. Left to right: T. Lott, B. Boothe, H. Kons, J. Douglass, R. Borth, M. Boothe, C. Wolf, and H. Wolf.

Fig. 15. L. Leonard, S. Cooey, J. Burkhalter, M. Boothe, B. Boothe, J. Douglass, and S. Vargo.

Fig. 16. Clockwise: B. McPhail, J. Douglass, S. Cooey, M. Boothe, and B. Boothe.

Fig. 17. Jim Vargo in his element.

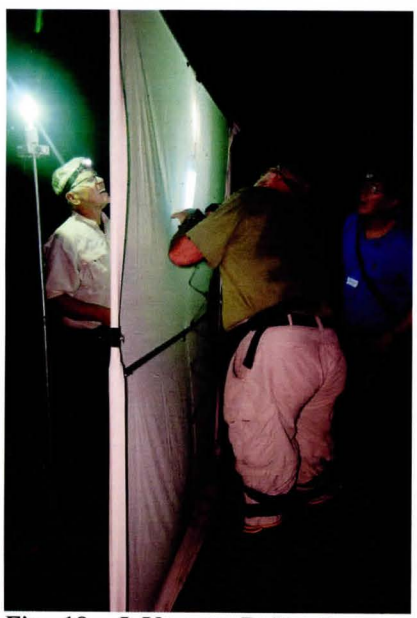

Fig. 18. J. Vargo, B. Boothe, and L. Durden.

Fig. 19. Clockwise: L. Durden, R. Borth, J. Douglass, and J. Vargo.

Fig. 20. Clockwise: B. Boothe, J. Vargo, and J. Douglass.

Fig. 21. Bob Borth smiling despite tidal flooding and rain.

Fig. 22. J. Douglass, H. Kons, and R. Borth (Perdido Key).

Fig. 23. Lifelong students: Leland Leonard and Bill Boothe.

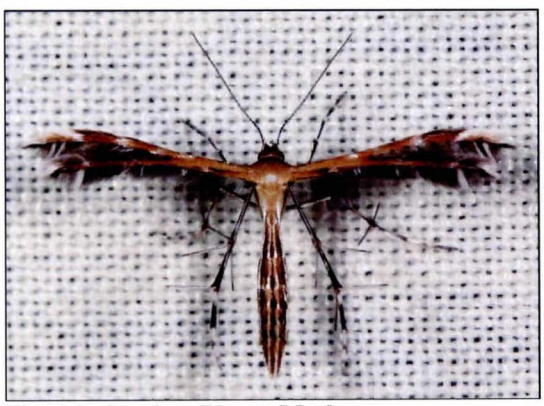

Fig. 24. Sundew Plume Moth (*Buckleria parvulus*).

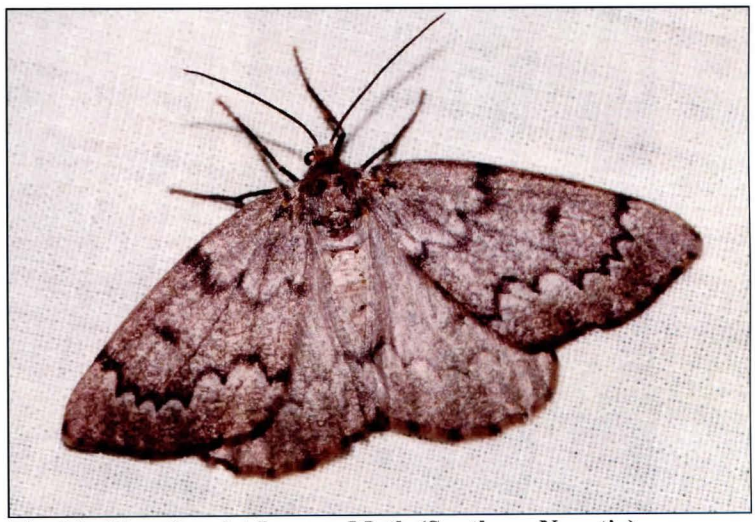

Fig. 25. Pine Conelet Looper Moth (Southern Nepytia) (*Nepytia semiclusaria*).

Fig. 26. P. Ogard, B. Boothe, T. Lott, S. Cooey, and L. Leonard.

Fig. 27. Clockwise: H. Kons, J. Douglass, R. Borth, J. Vargo, C. Wolf, B. Boothe, and M. Boothe.

Fig. 28. False Underwing Moth (*Allotria elonympha*).

Fig. 29. Stained Lophosis Moth (*Lophosis labeculata*).

Fig. 30. Spotted Phosphila Moth (*Phosphila miselioides*).

Fig. 31. One-spotted Variant Moth (*Hypagyrtis unipunctata*).

Fig. 32. Shangri-La Spring near Marianna, Florida.

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WELCOME TO THE NEW MEMBERS OF THE SL SOCIETY

Carol Wolf
2370 Hollow Springs Road
Woodbury, TN 37190

Monica Krancevic
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Thomas Wilton
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Karolyn Bull
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Baton Rouge, LA 70806

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MANY THANKS TO THE FOLLOWING DONORS WHO CONTRIBUTED TO THE SL SOCIETY

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HOW TO SAMPLE MOTH DIVERSITY EFFICIENTLY IN A SEASONAL ENVIRONMENT

BY

JOHN PICKERING AND TORI STAPLES

Abstract — Here we consider how best to sample moth diversity in a seasonal environment by analyzing nightly data collected from 2011 to 2015 at a site in Clarke County, Georgia (latitude 33.8882°N, longitude 83.2973°W). We resample these nightly data, mining them to evaluate the effectiveness of sampling regimes based on lunar phase versus selected nights of the week, such as each weekend. We also show what proportion of taxa are not detected if particular months are not sampled. Overall the 1,825 nightly samples had 1,256 lepidopteran taxa. Resampling only nights of new moons (i.e., 13 samples/year; 3.6% of nightly effort), the most productive single night of the lunar cycle, yielded 600 taxa (48% of total). The least productive night of the lunar cycle, just before the full moon, yielded 455 taxa (36%). Resampling one night per week (i.e., 52 samples/year; 14% of nightly effort) yielded an average across the week of 876 taxa (70% of total), approximately the same as the 870 taxa recorded in an equivalent effort of 4-nights of sampling around each new moon. Excluding the four least diverse winter months and resampling nightly March through October yielded 1,243 taxa (99%). The most diverse month, May, had 760 taxa (61%). To standardize effort and facilitate cross-site comparisons, we recommend that participants sample on each new moon and if time and resources permit, on Saturday and/or Sunday morning.

Introduction — In partnership with John Douglass and the SLS, Discover Life's *Mothing* project (www.discoverlife.org/moth) is building a network of study sites to compare how moth communities differ geographically and respond to environmental factors, such as the local flora, weather conditions, and urbanization. This article is the third in a series of SLN articles in support of this joint venture. In the first, Pickering (2015) gave an overview of the project and its broader objectives, inviting SLS members to participate in various ways. In the second, Pickering (2016) presented nightly data on seasonal moth activity and considered how '*pupa banks*' and '*aposematic vs. cryptic coloration*' might help explain results. Here we present results on the diversity of lepidopterans across five years of nightly samples from a site in Georgia. We resample these data to compare the efficiency of different sampling regimes in terms of the number of taxa that we detected. At the SLS's annual meeting this coming October, we plan to give a training workshop to help participants establish and run sites.

Inventories

Inventorying the entire species richness of lepidopterans at a site is a difficult if not endless task, in part because the vagaries of hurricanes and lesser winds will continue to blow in rare, nonresidents from afar. Our species accumulation curve in Clarke County, Georgia, continues to increase after over six years and 2,100 nights of sampling lights (Pickering 2015, Fig. 3). As of May 2016, we have accumulated a total of 1,275 taxa. This total includes *Sphacelodes vulneraria* (Geometridae) and *Syngamia florella* (Crambidae), two species which we recorded for the first time after storms in 2016, possibly arriving from Central America and the Gulf Coast, respectively, where they typically occur.

Residents, migrants, and vagrants

Comparing biodiversity across sites in an ecologically meaningful way is a greater challenge than building a species list for each site because one must understand the relative abundance of each taxa over time and across sites. To compare sites and understand biotic interactions and ecological changes, we ultimately need to distinguish between breeding residents, regular migrants sampled passing through, and occasional vagrants. Other than their potential to act as colonists of a site or vectors of diseases, vagrants are probably of minimal ecological importance. Noting *S. vulneraria* in Clarke County's species list reveals little about the species' underlying biology, but knowing that only one specimen of this species was recorded in over 2,200 nights suggests that *S. vulneraria* is a vagrant.

Moth communities as bioindicators

Each lepidopteran species is restricted in its larval host specificity, typically, a limited number of plant or lichen taxa. By sampling resident moth species across sites, a relatively easy task because of their general attraction to lights, we plan to use moth inventories as an efficient means to compare the diversity and health of host communities. It is certainly easier to use lights to monitor moths that feed on lichens, for example, than it is to bash around in the forest and measure changes in lichen communities.

Standard sampling effort

The ability to standardize and analyze sampling effort across sites is a critical requirement to complete inventories, compare them across sites, and use the composition of taxa within them as bioindicators. A list of species from a site reflects both the site's diversity and sampling effort. Because either minimal sampling of a rich site or extensive sampling at a low diversity one could produce species lists of similar lengths, we must factor in sampling effort in understanding and comparing site differences.

Objective

Our goal here is to evaluate the efficiency of sampling regimes to inventory species as a function of effort. This task is complicated by the phase of the moon, which has been known for many years to affect the number of insects attracted to light (Williams 1936; Williams et al. 1956; Bowden & Church 1973; Yela & Holyoak 1997), and by the seasonality of species that fly at restricted times of the year, such as the geometrids *Erannis tiliaria* (Winter Moth), *Phigalia denticulata* (Toothed Phigalia), *Phigalia strigataria* (Small Phigalia), *Alsophila pometaria* (Fall Cankerworm Moth), *Paleacrita vernata* (Spring Cankerworm Moth) and *Paleacrita merriccata* (White-spotted Cankerworm Moth), which are winter specialists and typically only fly between November and March in Clarke County, Georgia.

Methods — Since February 2010, a team of 17 individuals has taken 194,000 photographs to document the activity of creatures attracted to lights at 275 Blue Heron Drive, Clarke County, Georgia (latitude 33.8882°N, longitude 83.2973°W). Pickering (2016) gives detailed methods of the research at this site, including descriptions of the site's vegetation, lights, photographic methods, image management, identification, and tabulation of taxa. Since 28 November 2010, we have sampled every night through May 2016, except for one night, 22 June 2012. Overall, we identified 99% of the lepidoptera photographed to taxa (*'valid species'*, *'species group'*, *or 'morphospecies'*). All the data and associated images are online (see http://www.discoverlife.org/moth/report.html#GA_Clarke_Blue_Heron), including a species accumulation curve that is updated nightly.

Here we tabulate and resample the taxa in the 1,825 nightly samples taken in 2011 through 2015. We assigned each sample to a day of the week (Sunday, Monday, etc.) and a phase of the moon (day 0 through 29, with the new moon being 0; waxing halfmoon, 7; full moon, 14; waning half-moon, 21). Because lunar cycles do not align exactly to calendar days, the cycles end on either lunar day 28 or 29. In analyzing the data, we calculated the three days before the new moon and refer to them as lunar day -1, -2 and -3.

In each figure we graph the number of taxa resampled per year below the total accumulated across all five years. The yearly data show the variance.

Results & Discussion

Nightly samples across years — The 1,825 nightly samples yielded a 5-year total of 1,256 taxa, with individual years 2011-2015 totaling 812, 867, 920, 922, and 876, respectively. We use these values to evaluate resampling 13, 52, or 104 nights of effort per year based on the lunar phase versus days of the week.

Seasonal flight pattern — Fig. 1 presents the number of taxa recorded in each month for each of the five years and totals across all years. Overall, May was the most diverse month with a total 760 taxa (61% of 1,256 total; 8.5% of yearly effort). May had the highest monthly total in all years except 2012, when May's 404 taxa were slightly lower than June's 410 and August's 407. The four least diverse months were the winter months of November through February, which totalled 139, 84, 54, and 111 taxa, respectively. Nightly resampling of March through October, excluding the four least-diverse months, yielded 1,243 taxa (99% of total; 67% of yearly effort). Similarly, resampling the six months of April - September yielded 1,186 taxa (94% of total; 50% of yearly effort). For 33% of yearly effort, resampling the four months of March - June yielded 1,048 taxa (83% of total); April - July, 1,065 (85%); May - August, 1,058 (84%); June - September, 1,027 (82%). While this observed seasonal pattern will differ geographically across other latitudes and elevations, it suggests that once we determine a site's overall seasonal trend from the first year of sampling, it may be possible to discontinue sampling certain months, in this case November through February, and focus on months with more flight activity.

(Continue to next page)

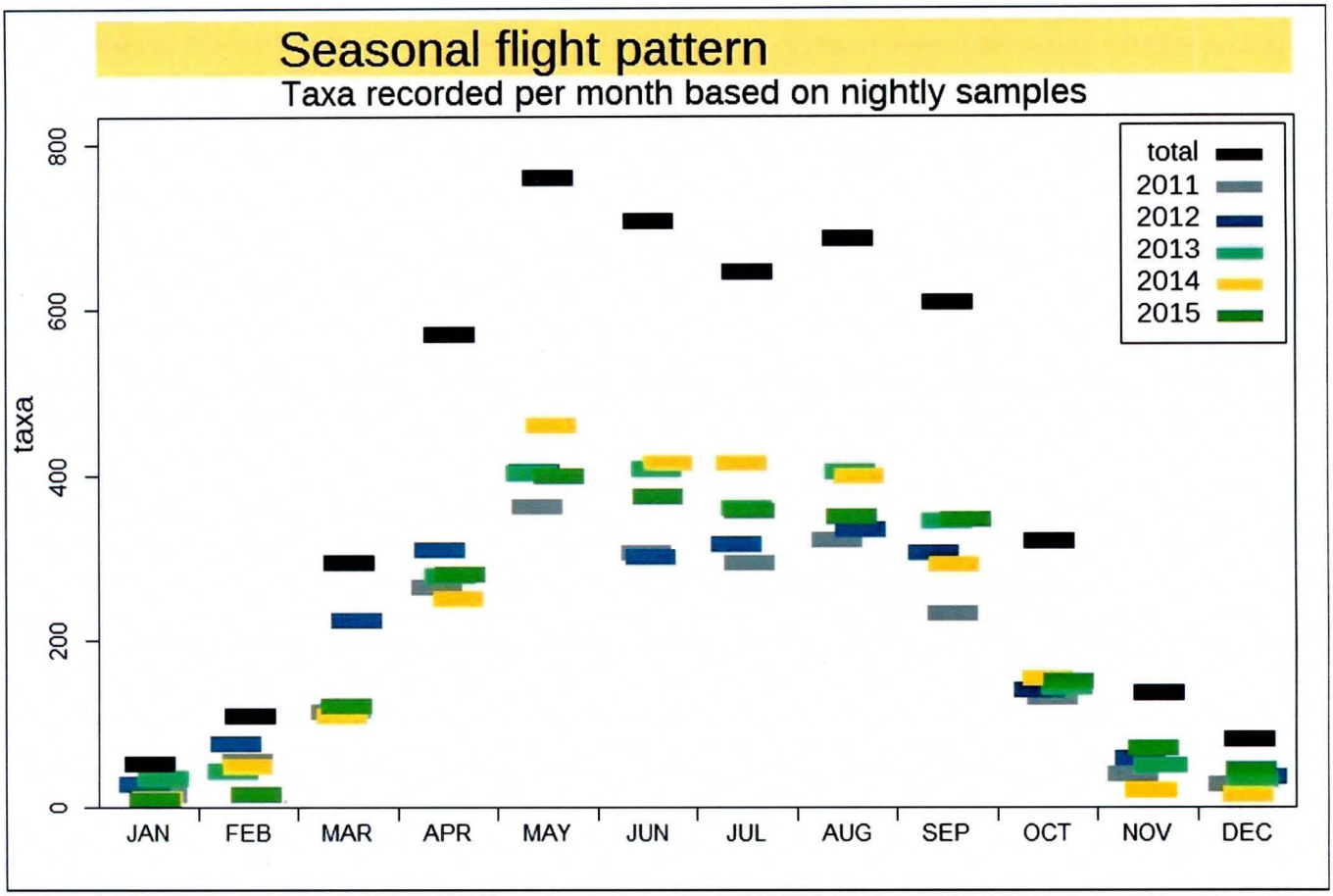

Fig. 1. SEASONAL FLIGHT PATTERN. Taxa recorded per month based on nightly samples. Blue Heron Drive, Clarke County, Georgia, 2011-2015.

Effort of 13 samples per year — Fig. 2 presents the number of taxa resampled for each day of the lunar cycle, where day-0 is the new moon. Of all the days in the lunar cycle, the new moon had the highest total across all years of 600 taxa (48% of total). However, there is inconsistency across the years in the day of the lunar cycle that had the highest number of taxa, being day-28 (251 taxa in 2011), day-0 (292 in 2012), day-1 and day-22 (304 in 2013), day-1 (311 in 2014) and day-24 (298 in 2015).

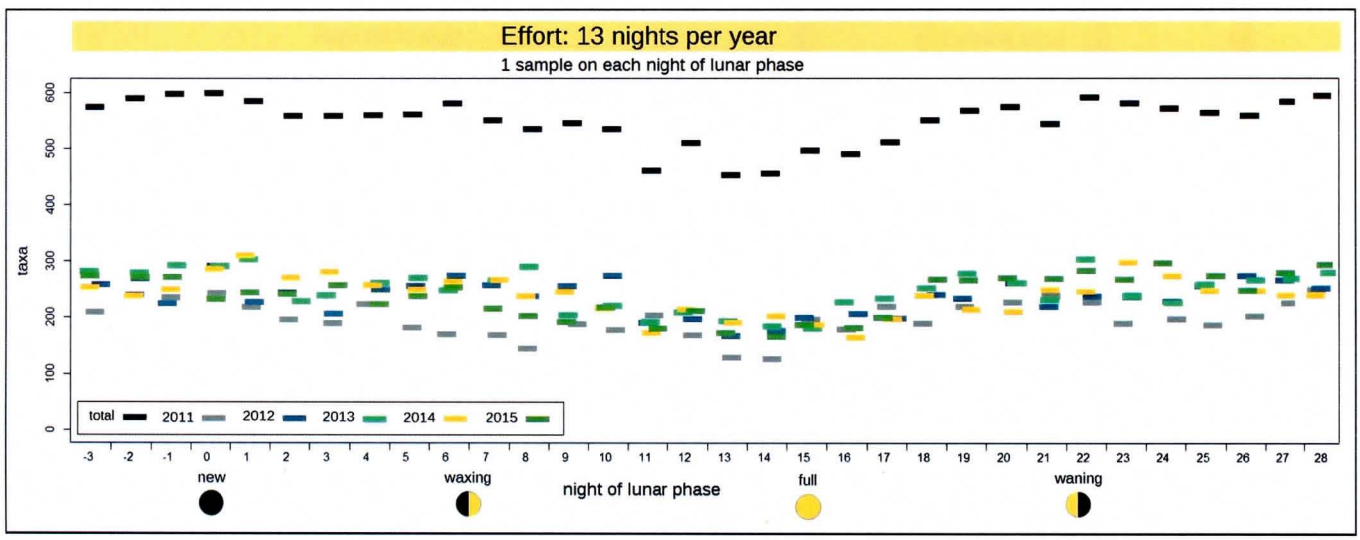

Fig. 2. EFFORT OF 13 NIGHTS/YEAR. Taxa recorded by resampling each night of lunar phase. Blue Heron Drive. Clarke County, Georgia, 2011-2015.

Fig. 2 clearly shows a depression of values observed immediately around the full-moon. Of the entire lunar cycle, the six days with the lowest totals were lunar day-12 through day-16, with values ranging from 455 (36% of total) to 511. The lowest total is on day-13, which is slightly above the full moon's value of 458 on day-14.

Although most of the days in the lunar cycle yield similar results, except for the nights around the full moon, we recommend sampling on each new moon in order to facilitate comparisons across sites.

Effort of 52 samples per year — Fig. 3 compares two regimes for sampling 52 nights per year based on the phase of the moon (on left) versus on a particular day of the week (on right). Here we resampled four nights around each new (day -1, 0, 1, 2), waxing (day 6, 7, 8, 9), full (day 13, 14, 15, 16) and waning moon (day 20, 21, 22, 23). Except for the samples around the full moon, the totals are similar across the other three lunar phases and the samples taken weekly. Resampling one night per week yielded an average across the week of 876 taxa (70% of total; ranging from 850 taxa on Tuesday to 905 on Sunday). This average is approximately the same as the total number of taxa resampled in an equivalent effort of 4-nights around each new (870 taxa), waxing (877 taxa), and waning (873 taxa) lunar phase. It exceeds the 4-night sample around each full moon (797 taxa; 63% of total).

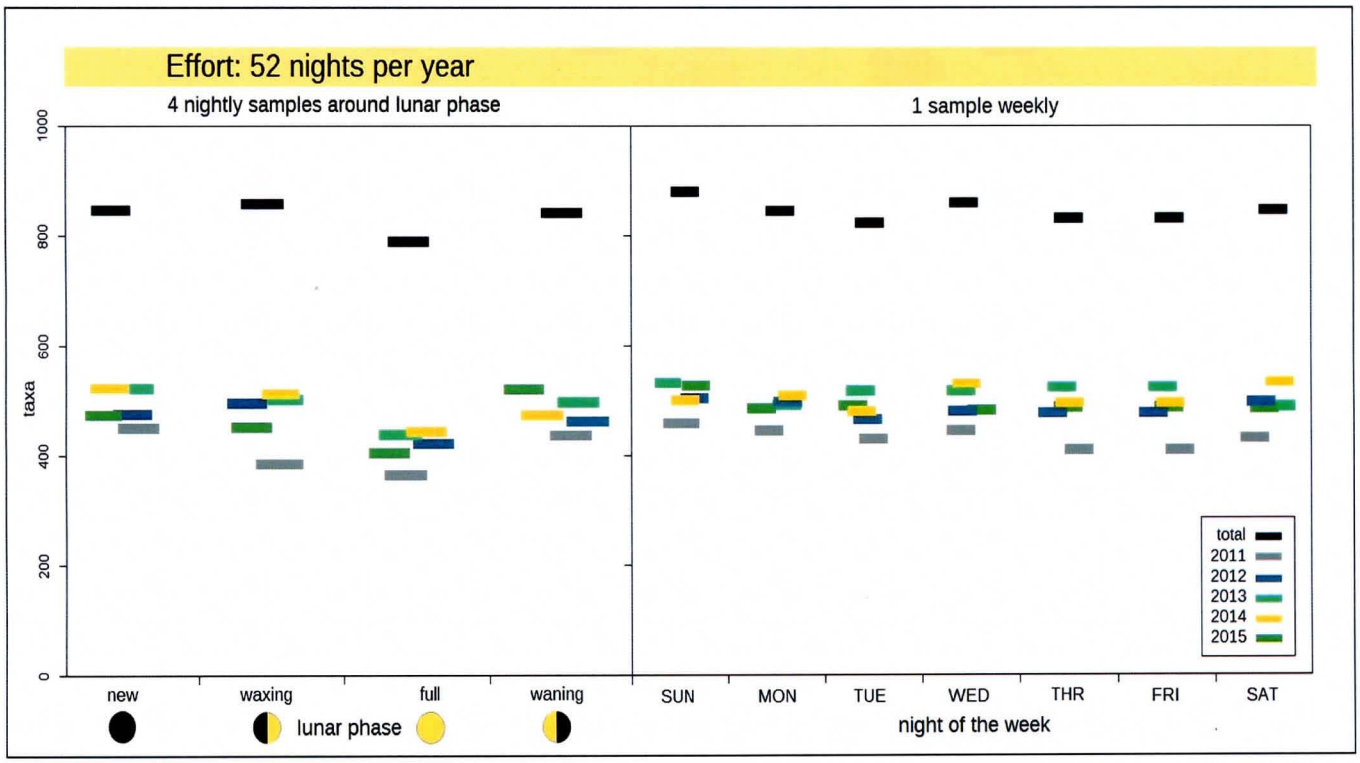

Fig. 3. EFFORT OF 52 NIGHTS/YEAR. Taxa recorded by resampling 4-nights around the new, waxing, full, and waning moons in comparison to sampling one night per week. Blue Heron Drive, Clarke County, Georgia, 2011-2015.

Thus, if effort is increased to 52 nightly samples annually, we recommend sampling one night per week, ideally on a weekend morning in order to facilitate cross-site comparison by doing it as much as possible on the same nights across sites. While we can safely assume that the moths are oblivious to the particular day of the week, human participants could exhibit observer bias, having good and bad nights of the week.

Effort of 104 samples per year — Fig. 4 compares two regimes for sampling 104 times per year based on lunar phase (on left) versus 2 nightly samples per week (on right). The lunar phases represent 8-nights around the new moon (days -3, -2, -1, 0, 1, 2, 3, 4), waxing half-moon (days 4, 5, 6, 7, 8, 9, 10, 11), full moon (days 11, 12, 13, 14, 15, 16, 17, 18), and waning half-moon (days 18, 19, 20, 21, 22, 23, 24, 25), with respective total taxa values of 1007 (80% of total), 1006 (80%), 972 (77%), and 1020 (81%). These values are less than 1,024 taxa (82% of total) average of resampling the 21 possible pairs of nights (range of 1,002 through 1,044). The right side of the figure also shows the values of resampling three specific pairs of weekend nights.

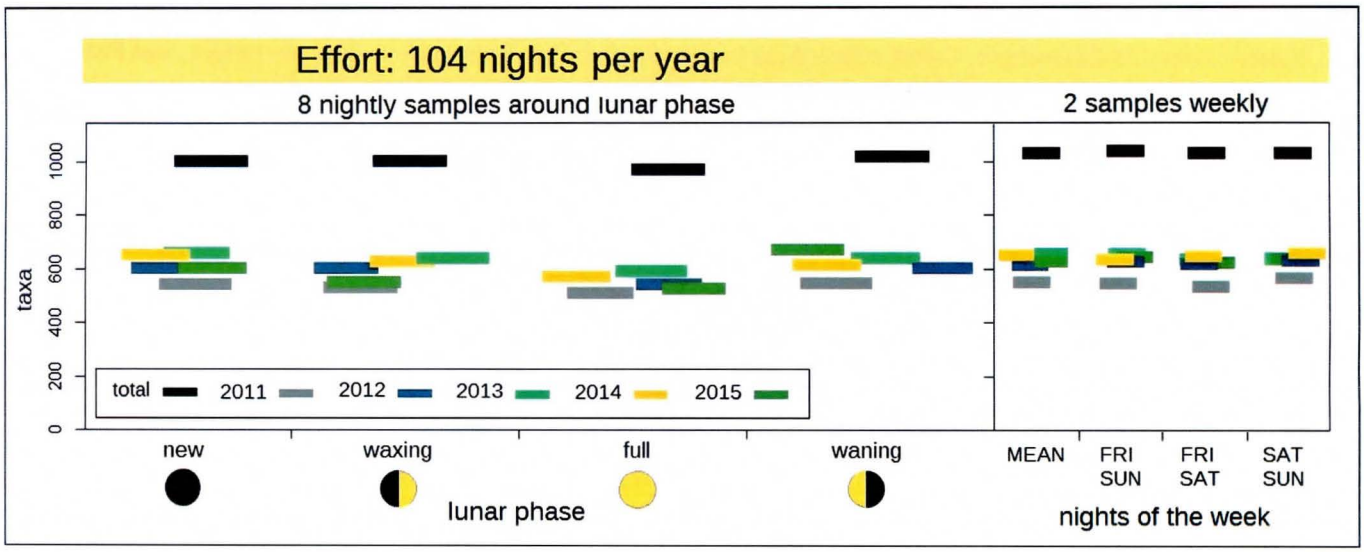

Fig. 4. EFFORT OF 104 NIGHTS/YEAR. Taxa recorded by resampling 8-nights around the new, waxing, full, and waning moons in comparison to sampling two nights per week. Blue Heron Drive, Clarke County, Georgia, 2011-2015.

Conclusions

Based on the above results, we recommend that the most efficient means to document the moths at a site is to sample on each new moon for a total of 13 samples per year. If winter samples do not yield any moths in the first year, then sampling new moons in these months can be skipped in subsequent years.

If time and resources permit, we recommend additional sampling. Our results show that sampling four days around each new moon yields the same overall diversity as sampling one day each week, i.e., 52 nights per year in both regimes. Despite the similarity in results, we recommend sampling each week rather than around each new moon, as weekly sampling gives more seasonal data across years and makes it easier to determine the annual number of flights per species.

If enthusiasm really strikes, as we hope it does, add a second day per week to increase species accumulation, and a third, …

For all practical purposes, because species accumulation curves for flying insects never level off, there is a need to develop the means to compare only resident species across sites. With the exception of locally rare taxa and ones that tend not to be attracted to lights, resident taxa accumulate rapidly in the first year of sampling. In the next article in this series, we will compare the accumulation of moths at two sites in Clarke County, introducing a series of metrics based on occurrence patterns to determine residents from vagrants.

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Charlie's report is as follows: Florida report for January through April, 2016. Fairly mild and dry winter in Gainesville, with no fully killing frosts in the historic downtown area where I live. However, Viburnum bloom was a bit later than normal and not as many expected butterflies recorded on blossoms. Here are my Gainesville and vicinity records so far:

Leptotes cassius, January 4, April 10, 17, 24
Heliconius charithonia, January 4, 22, 28, Feb. 28, March 6, 19, April 10, 16, 17, 23, 24, 30
Papilio polyxenes asterius, February 19, April 4, 21
Phoebus sennae, February 23, March 11, 15, 20, 29, 30, April 4, 6, 10, 16, 29
Heraclides cresphontes, March 1, 11, 15, 22, 30, April 8, 18
Vanessa atalanta, March 1, 11, 20, April 1, 6, 13
Junonia coenia, March 1, 11, 15, 20, April 1, 8, 9, 10, 13, 18, 20, 22, 29
Erynnis baptisiae, March 10
Papilio glaucus, March 20, 24, 30, April 5, 8
Epargyreus clarus, March 20
Papilio troilus, March 22, 29, 30, April 1
Poanes yehl, March 30
Vanessa virginiensis, March 30, April 6
Libytheana carinenta, March 30, 31, April 4, 5, 6, 9
Atlides halesus, March 30
Battus polydamas, April 4, 6
Agraulis vanillae, April 6, 24

Euphyes vestris, April 8
Danaus plexippus, April 8, 30
Phoebus philea, April 18
Pontia protodice, April 20
Calycopis cecrops, April 24

Barbara Woodmansee led a trip on February 28 to Devils Hammock in the upper Wacassassa WMA just west of Bronson in Levy Co. "We were hunting for Henry's & E. Pine elfin but did not find either - seems we were a week or two early for blooming willows. I did find and bring home a very nice *polyphemus* cocoon that I hope will be a female. I have put it in my breeding cage and will check closely to see what pops out. I am ready to get back in the business of raising caterpillars!" An adult later emerged. Her positive identifications included:

> *Lerema accius, Hylephila phyleus, Battus philenor* (2), *Papilio palamedes, Phoebus sennae, Calycopis cecrops* - MANY!, *Polygonia interrogationis, Phyciodes tharos, Phyciodes phaon, Junonia coenia, Heliconius charithonia* and *Hermeuptychia sosybius.*

On March 5 Barbara visited the "Nature Drive" (Cabin Rd. and vicinity) at Lower Suwannee National Wildlife Reserve, Levy County. Her sighting list for the day follows:

> *Papilio palamedes* (6-8), *Eurytides marcellus* (2), *Phoebus sennae* (1), *Callophrys grynea sweadneri* (1), *Polygonia interrogationis* (1), *Phyciodes tharos* (several), *Phyciodes phaon* (several), *Limenitis archippus* (1), *Danaus gilippus* (1), and *Hermecuptychia sosybius*.

Barbara next visited Cow Creek Road in Goethe State Forest, Levy County, on March 6 and reported finding a parasitized *Hyalophora cecropia* cocoon, plus the following butterflies:

> *Callophrys henrici,* and *Anthanassa texana seminole*. (She did not list her other sightings.)

Barbara reported on records from San Felasco Hammock Preserve State Park in Alachua County on Saturday, March 12, also noting very dry conditions, and that no *Megathymus yuccae* were spotted. Her list for the day included:

> *Erynnis horatius, Battus philenor* (male and female), *Papilio glaucus, Papilio palamedes* (many), *Heraclides cresphontes, Eurytides marcellus, Phoebus sennae, Eurema daira, Abaeis nicippe, Phyciodes phaon, Polygonia interrogationis, Vanessa atalanta, Vanessa virginiensis, Junonia coenia, Anaea andria* (4), *Agraulis vanillae* and *Hermeuptychia sosybius*.

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://dscweb.daltonstate.edu/galeps/).

James sends in the following report:

The contributors include James Adams (JA 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 2016 unless otherwise specified.

Carbondale, I-75 exit 326, Whitfield Co.:
LASIOCAMPIDAE: *Heteropacha rileyana*, April 17. **EUTELIIDAE:** *Eutelia pulcherrimus*, many (April 14 – 25). **NOCTUIDAE:** *Abrostola ovalis*, April 25.

Georgia Southern Campus, Statesboro, Bulloch Co., April 19, LD:
ZYGAENIDAE: *Neoprocris floridana*, sesiid pheromone trap on the Georgia Southern University campus (Statesboro).

Ohoopee Dunes Tract 4, Emanuel Co., May 4-5, with Patrick Adams:
GEOMETRIDAE: *Pimaphera sparsaria, Idaea ostentaria* (COUNTY). **EREBIDAE:** *Virbia rubicundaria, Grammia placentia, Euerythra phasma, Pygarctia abdominalis, Idia gopheri, Catocala clintoni.* **NOCTUIDAE:**

Condica concisa, Sympistis perscripta.

Ohoopee Dunes habitat, ½ mile S of I-16/State Hwy. 1 intersection, March 12, with Patrick Adams:
GEOMETRIDAE: *Fernadella georgiana*, first March records; now have records for every month from March through September.

Dixon WMA, NE of Laura Walker SP Lake, wooded area, Ware Co., March 8-9:
GEOMETRIDAE: *Digrammia gnophosaria, Episemasia solitaria, Petrophora divisata, Nemoria catachloa, Eubaphe meridiana.* **SATURNIIDAE:** *Hyalophora cecropia* (2), *Callosamia securifera.* **LASIOCAMPIDAE:** *Phyllodesma occidentis.* **EREBIDAE:** Virbia *fergusoni, Spilosoma dubia, Apantesis vittata, Abablemma brimleyana, Pseudanthracia coracias.* **NOCTUIDAE:** *Psaphida styracis.*

Dixon WMA, SW of Laura Walker SP Lake, swampy area, Ware Co., March 8-9:
SESSIIDAE: *Synanthedon tepperi* (has to be distinct from *acerni*). **GEOMETRIDAE:** *Petrophora divisata.* **SATURNIIDAE:** *Hyalophora cecropia* (2). **EREBIDAE:** *Virbia fergusoni, Zale squamularis.*

Griffin Ridge WMA, 3 mi. SW of Ludowici, Long Co, March 9 - 10:
SESSIIDAE: *Synanthedon tepperi.* **GEOMETRIDAE:** *Tornos scolopacinarius, Ceratonyx satanaria* (including a female), *Nemoria bistriaria* (brown). **EREBIDAE:** *Pseudanthracia coracias.* **NOCTUIDAE:** *Feltia manifesta.*

Sapelo Island, McIntosh Co:
Beach habitat, end of Beach Rd., 31°23'26.5"N, 81°15'54.5"W:
March 10-12, JA & BS:
LACTURIDAE: *Lactura pupula, L. basistriga.* **GEOMETRIDAE:** *Tornos scolopacinarius* (ISLAND), *Cleora projecta* (ISLAND). **EREBIDAE:** *Apantesis vittata, Hypena palparia* (ISLAND). **NOLIDAE:** *Afrida ydatodes.* **NOCTUIDAE:** *Charadra deridens, Leucania subpunctata.*
May 7-8, JA:
TORTRICIDAE: *Atroposia oenotherana* (ISLAND). **GEOMETRIDAE:** *Tornos scolopacinarius, Idaea retractaria.* **EREBIDAE:** *Neoplynes eudora, Pyrrharctia isabella* (ISLAND), *Leucanopsis longa* (ISLAND), *Hypenodes franclemonti, Isogona tenuis, Argyrostrotis quadrifilaris.* **NOCTUIDAE:** *Enigmogramma basigera, Ponometia candefacta* (ISLAND).

Dune habitat, just S of Beach Rd., 31°23'26.5"N, 81°15'54.5"W:
March 10-12, JA & BS:
GEOMETRIDAE: *Cleora projecta, Ceratonyx satanaria, Pero zalissaria, Leptostales crossi* (four specimens; ISLAND). **EREBIDAE:** *Apantesis vittata, Zale confusa* (ISLAND). **NOCTUIDAE:** *Psaphida resumens* (the southern morph), *Lacinipolia erecta* (ISLAND), *Leucania subpunctata.*
May 5-8, JA & LD:
TORTRICIDAE: *Atroposia oenotherana* (ISLAND). **GEOMETRIDAE:** *Eusarca fundaria, Idaea micropterata, I. retractaria, S. compensata.* **MIMALLONIDAE:** *Cicinnus melsheimeri.* **EREBIDAE:** *Hypercompe scribonia, Cisseps fulvicollis, Hypenodes fractilinea, Zale bulcholzi. Garella nilotica.* **NOCTUIDAE:** *Acronicta oblinita, Derrima stellata, Condica concisa, Properigea tapeta, Sympistis* sp. nov. (new, STATE obviously).

Lighthouse Rd., Salt marsh edge habitat, 31°23'25.7"N, 81°16'55"W, March 11-12, JA & BS:
LACTURIDAE: *Lactura basistriga* (ABUNDANT!). **GEOMETRIDAE:** *Pero zalissaria.* **NOCTUIDAE:** *Condica claufacta.*

Lighthouse, May 8, Patrick Adams:
LYCAENIDAE: *Brephidium pseudofea.*

Junction – Autobahn, Short cut road, Horse Pasture road, May 5-8, JA with Patrick Adams:
LYCAENIDAE: *Satyrium l. liparops* (ISLAND), *Satyrium f. favonius, Brephidium pseudofea.* **EREBIDAE:** *Dahana atripennis.*

Short Cut Rd., 31°24'36"N, 81°17'3"W:
March 10-12, JA & BS:
GEOMETRIDAE: *Cleora projecta, Episemasia solitaria, Tacparia zalissaria, Phrudocentra centrifugaria* (STATE),

Idaea violacearia. **NOCTUIDAE:** *Psaphida resumens* (the southern morph), *Gonodes liquida* (STATE), *Condica claufacta, Acherdoa ferraria.*

May 5-8, JA, LD, and Patrick Adams:

LIMACODIDAE: *Monoleuca* sp. **LYCAENIDAE:** *Satyrium l. liparops, Satyrium f. favonius.* **NYMPHALIDAE:** *Enodia portlandia.* **SATURNIIDAE:** *Eacles imperialis.* **EREBIDAE:** *Catocala connubialis.* **EUTELIIDAE:** *Paectes oculatrix.* **NOCTUIDAE:** *Alypia wittfieldi, Acronicta tritona, Condica claufacta, Properigea tapeta, Acherdoa ferraria.*

Airport Rd., Cane habitat, light trap, 31°25'8"N, 81°17'18"W, March 10-11, JA & BS:

GEOMETRIDAE: *Tornos scolopacinarius* (ISLAND), *Tacparia zalissaria.* **EREBIDAE:** *Ablemma brimleyana.* **NOCTUIDAE:** *Psaphida styracis, Condica claufacta.*

Airport Rd., Forest habitat, nr. Hangar, 31°25'23"N, 81°17'2"W:

March 10-12, JA & BS:

LACTURIDAE: *Lactura basistriga.* **GEOMETRIDAE:** *Tornos scolopacinarius, Cleora subjecta, Ceratonyx satanaria, Pero zalissaria, Tacparia zalissaria.* **EREBIDAE:** *Virbia fergusoni, Hypenodes franclemonti/fractilinea* (ISLAND), *Ablemma brimleyana, Hypena palparia.* **NOLIDAE:** *Afrida ydatodes.* **NOCTUIDAE:** *Psaphida resumens* (the southern morph), *P. styracis, Bellura obliqua* (COUNTY), *Metaxaglaea violacea.*

May 5-8, JA & LD:

GEOMETRIDAE: *Scopula lautaria.* **MIMALLONIDAE:** *Cicinnus melsheimeri.* **EREBIDAE:** *Hypenodes franclemonti, Ablemma brimleyana, Zale bucholzi, Catocala coccinata.* **NOLIDAE:** *Nola pustulata* (COUNTY).

Sapelo Island, McIntosh Co., April 7-8, JH:

LIMACODIDAE: *Adoneta spinuloides* (ISLAND). **GEOMETRIDAE:** *Pimaphera sparsaria, Eusarca fundaria.* **SATURNIIDAE:** *Citheronia sepulcralis* (ISLAND). **EREBIDAE:** *Utetheisa ornatrix*, first spring record. **NOCTUIDAE:** *Psaphida resumens, Derrima stellata.*

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Steve sends in the following report:

Butterfly Records

The following selected butterfly records from March through May 2016 were compiled by Harry LeGrand. Names in parentheses are counties.

Spring 2016 was the first spring since 2012 in which there were no "killing" ice storms and snow storms from late February into mid-March. As a result, numbers of adult butterflies tended to be the best since 2012. Rainfall for the season was mostly above average, especially in May. Temperatures were about average, on the whole, but May was quite cloudy for much of the month. Both *Papilio glaucus* and *Vanessa virginiensis* were in good to excellent numbers this spring, much more common than in the past few spring seasons. However, there were only a few reports of *Danaus plexippus*, and none for *Vanessa cardui*, for the season.

PIERIDAE:

Euchloe olympia, a group of butterfliers checked on the main colony in the state in Madison County on April 18, and they saw just one individual. It is hoped that this date was simply at the tail end of the flight period this year.

LYCAENIDAE:

Satyrium calanus, Richard Stickney found a larva of an unknown species in Duplin **(COUNTY)** this spring. He took it back home in Durham, and it eclosed on April 27 into this species. There is an important question to consider: As the previous early date for an adult of this species is May 8, is it suitable to now consider April

27 a legitimate early date, as one might assume that the larva would have likely been moved into a warmer or more sheltered microhabitat and thus may have emerged earlier than "in the wild"?

Satyrium kingi, a good find, and near the early end of the flight period, was one seen by Taylor Piephoff on the mainland portion of Ocean Isle Beach (Brunswick) on May 27.

Satyrium favonius favonius, Taylor Piephoff conducted his annual scouting of Chinkapin (*Castanea pumila*) blooms on the mainland portion of Ocean Isle Beach (Brunswick) on May 27; he found a good total of six individuals.

Callophrys henrici, Sven Halling saw one at Pilot Mountain State Park (Surry) **(COUNTY)** on March 17, and Richard Stickney saw two at this park on April 18.

Callophrys hesseli, the only sighting for the spring was of four noted by John Ennis at a known spot in the Green Swamp (Brunswick) on March 25.

Erora laeta, an excellent three sightings were made this spring, two by Brian Bockhahn on successive days! On April 17 he saw one at Elk Knob State Park (Watauga), and on April 18 he saw another at Mount Jefferson State Natural Area (Ashe), a known site for the species. Gail Lankford saw one along a dirt road near her house in northern Buncombe County on April 20; she has also seen this species here previously.

Celastrina neglectamajor, of the few reports, the best was a decent count of six, four being at a puddle party with a few *Celastrina neglecta*, as seen by Harry LeGrand in northern Haywood County on May 25.

Celastrina nigra, Doug Johnston saw three males near Leicester (Buncombe) on April 4; this is the first record for this county in over 30 years. At a known site in Graham County, Matt Orsie counted 12 individuals on April 23.

NYMPHALIDAE:

Speyeria diana, a male seen near Old Fort (McDowell) on May 30 by Nancy Cowal was one of the earliest ever in the state.

Phyciodes cocyta incognitus, few people make the long trek to Clay County anymore, but Rickard Stickney did, and on May 24 he photographed one (and saw perhaps a few more) in the eastern part of the county. Much is still to be learned about this taxon in the state (where it occurs only in the mountains), especially as there are surprisingly few good records (photos or specimens) for later broods (*i.e.*, June or later).

Phyciodes batesii maconensis, at the same place and date where he saw the above *Phyciodes* species, Richard Stickney was rewarded by seeing at least five, with a few of them photographed. This taxon is locally common in Clay County.

Lethe creola, Hunter Phillips provided a photo of an individual at the edge of his yard near Holly Ridge (Onslow) **(COUNTY)** on May 8; this species is surprisingly scarce in the southeastern Coastal Plain, despite an abundance of cane (*Arundinaria gigantea*).

HESPERIIDAE:

Erynnis brizo, this species is quite rare in much of the Coastal Plain, and thus two photographed on March 28 by Hunter Phillips at Stones Creek Game Land (Onslow) **(COUNTY)** were quite notable.

Erynnis martialis, both spring season records came from the same general area in the mountains – Sandy Mush Game Land (Buncombe). Doug Johnston saw one there on April 17, and Matt Orsie had an excellent state count of four (with several photographed) on April 24. For whatever reason, reports from outside of the mountains have become quite rare in the past decade.

Lerema accius, seldom reported before April, one was seen by Mike Turner in Umstead State Park (Wake) on March 25.

Hesperia metea, a surprising first record for well-worked Buncombe **(COUNTY)** was one photographed by Matt Orsie at Sandy Mush Game Land on April 24. At a known location in Madison County, Gail Lankford, Doug Johnston, and others saw one on April 18.

Polites peckius, one was photographed in extreme northern Rockingham County on May 9 by Richard Stickney; this county lies near the eastern edge of the range in the state.

Amblyscirtes aesculapius, a good find in the Piedmont province was one seen by Chris Talkington in his yard in Concord (Cabarrus) on April 9.

Amblyscirtes vialis, the first recent record of the species for Macon County was of three seen along the Bartram Trail on April 16 by Jason Love.

Moth Records

The following selected moth records were submitted by Ed Corey (EC), Tony Desantis (TD), Steve Hall (SH), Paul Scharf (PS), and Bo Sullivan (JBS). As with the butterflies, this spring's moth numbers were particularly good in

North Carolina, with a large number of nice finds reported.

MEGALOPYGIDAE:
Lagoa pyxidifera, APR 28, Harnett, SH **(COUNTY)**

THYATIRIDAE:
Euthyatira pudens, APR 8, Warren, PS

GEOMETRIDAE:
Heliomata infulata, APR 28, Cumberland, SH; common in mesic sandhills supporting populations of Dwarf Bristly Locust
Eumacaria madopata, APR 28, Cumberland, SH
Tornos abjectarius, MAR 12, Warren, PS
Cleora projecta. APR 11, Hoke, SH
Lomographa semiclarata, APR 1, Orange, SH; found at a window at night; only the second record for this county and one of just a few known from the Piedmont of North Carolina
Lytrosis permagnaria, MAY 9, Orange, SH; four males were collected at the same location as the one found last year (on a monadnock)
Stenaspilatodes antidiscaria, APR 11, Hoke, SH; APR 28, Harnett, SH **(COUNTY)**
Tacparia zalissaria, APR 28, Cumberland, SH **(COUNTY)**; appears to be the first record for the Fall-line Sandhills region of North Carolina (found more widely in the Outer Coastal Plain)
Gueneria similaria, MAY 9, Orange, SH **(COUNTY)**
Besma endropiaria, MAY 9, Orange, SH; few Piedmont records but occurs regularly at the site where found
Nemoria elfa, APR 28, Harnett, SH **(COUNTY)**
Scopula purata, APR 28, Moore, SH; frequent around semi-flooded wetlands in the Sandhills

NOTODONTIDAE:
Datana ranaeceps, APR 28, Cumberland, SH
Symmerista canicosta, MAY 9, Orange, SH
Dasylophia thyatiroides, MAY 9, Orange, SH **(COUNTY)**
Heterocampa subrotata, MAY 9, Orange, SH

EREBIDAE:
Crambidia pura, APR 11, Hoke, SH; APR 28, Cumberland, SH
Virbia laeta, APR 28, Harnett, SH **(COUNTY)**
Grammia figurata, MAY 9, Orange, SH **(COUNTY)**
Grammia placentia, APR 28, Harnett, SH
Pseudanthracia coracias, APR 11, Hoke, SH **(COUNTY)**
Zale phaeocapna, MAY 9, Orange, SH **(COUNTY)**; species confirmed by dissection
Zale submediana, MAR 16, Orange, SH; APR 11, Hoke, SH **(COUNTY)**; MAY 9, Orange, SH
Zale helata, MAY 9, Orange, SH
Zale metatoides, MAY 9, Orange, SH
Ptichodis bistrigata, APR 11, Hoke, SH; APR 28, Cumberland, SH **(COUNTY)**
Argyrostrotis quadrifilaris, APR 11, Hoke, SH
Hyperstrotia nana, APR 28, Harnett, SH **(COUNTY)**

NOLIDAE:
Nola pustulata, APR 28, Cumberland, SH **(COUNTY)**

NOCTUIDAE:
Ponometia parvula, APR 28, Harnett, SH
Acronicta morula, MAY 9, Warren, PS **(COUNTY)**
Callopistria granitosa, APR 28, Harnett, SH **(COUNTY)**
Emarginea percara, APR 28, Moore, SH
Pyreferra pettiti, MAR 10, Warren, PS **(COUNTY)**; MAR 14, Jones, JBS **(COUNTY)**
Psaphida resumens, MAR 12, Warren, PS
Orthosia garmani, MAR 9, Orange, SH **(COUNTY)**

Morrisonia evicta, MAR 28, Orange, SH/EC/TD
Morrisonia latex, MAY 9, Orange, SH **(COUNTY)**; appears to be the first record for the eastern Piedmont of North Carolina

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Ed states that this report is for January - April 2016. Our activities limited by health problems especially for Charles Bordelon (CWB).

From Beaumont, Jefferson Co., the following species were noted:
Limacodidae: *Adoneta spinuloides* 26 April 2016; **Erebidae:** *Simplicia cornicalis* 7 January 2016; *Zale galbanata* 2 January, 2016; **Noctuidae:** *Condica mobilis*, (all CWB).

From Spring Valley, Harris Co.:
Papilionidae: *Papilio rumiko* 16 February; **Sesiidae:** *Synanthedon decipiens*, 15 February (B/K).

From Six Mile, Sabine Co., all 16 April, 2016 (all B/K):
Tortricidae: *Ecdytolopha insiticiana*; **Cossidae:** *Inguromorpha basalis*; **Geometridae:** *Macaria distribuaria, Nemoria mimosaria*; **Lasiocampidae:** *Tolype notialis*; **Sphingidae:** *Ceratomia undulosa*; **Erebidae:** *Virbia immaculata* (NEW for TX), *Catocala clintoni*; **Eutilidae:** *Paectes oculatrix*.

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

Harry sends in the following 2016 winter/spring report for Virginia:

Butterflies [County records in all CAPITALS]:

Battus philenor philenor - Rockbridge County: near Kerrs Creek, May 7, 2016 (Nick Grishin). Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin).

Eurytides marcellus – Clarke County: Berrys, May 16, 2016 (Harry Pavulaan). Loudoun County: Leesburg, Veterans Memorial Park; spring flight commenced on March 11, 2016, unusually early for this region. Major irruption in Potomac River woodlands beginning on April 13, with hundreds observed daily. Adults commonly observed in residential neighborhood adjacent to forest, flying over lawns, visiting flowering shrubs (Harry Pavulaan).

Papilio glaucus glaucus - Augusta County: near Deerfield, May 8, 2016 (Nick Grishin). Clarke County: Berrys, May 16, 2016 (Harry Pavulaan). Rockbridge County: near Kerrs Creek, May 7, 2016; near Goshen, May 8, 2016 (Nick Grishin). Shenandoah County: near Forestville, May 8, 2016 (Nick Grishin).

Papilio troilus troilus - Clarke County: Berrys, May 16, 2016 (Harry Pavulaan). Fauquier County: George Thompson WMA, Markham, May 16, 2016 (Harry Pavulaan). Rockbridge County: near Goshen, May 8, 2016 (Nick Grishin). Shenandoah County: near Forestville, May 8, 2016 (Nick Grishin).

Anthocharis midea annickae – Loudoun County: Leesburg, Veteran's Memorial Park, March 18 – April 20, 2016, then interrupted by rainy spell. Somewhat of an early flight this season. Major localized irruption in woodlands commenced March 28 after the previous day's rain, with some swarming behavior, likely fresh emergers taking flight. Well over 100 observed in one hour along one trail (Harry Pavulaan). Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin).

Pieris rapae - Rockbridge County: near Kerrs Creek, May 8, 2016 (Nick Grishin). Shenandoah County: near Forestville, May 8, 2016 (Nick Grishin).

Colias philodice philodice - Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin).

Callophrys (*Mitoura*) *gryneus gryneus* – Powhatan County: Powhatan National Wildlife Refuge, April 18, 2016 (photo - Mark Adams).

Cupido (*Everes*) *comyntas comyntas* - Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin). Shenandoah County: near Forestville, May 7, 2016 (Nick Grishin).

Celastrina ladon – Loudoun County: Leesburg, Veterans Memorial Park, March 24, 2016. The only individual confirmed at this location, this year, out of hundreds of confirmed spring form *Celastrina neglecta* (Harry Pavulaan).

Celastrina neglecta spring form – Loudoun County: Leesburg, Veterans Memorial Park, March 11, 2016. Twelve+ observed on day-one of spring emergence. Most netted for confirmation. One specimen was a "*marginata*" form, very rare in spring brood *neglecta*, at least in this region (vouchered); Two additional specimens of the "*marginata*" form were collected on March 15; A strong irruption occurred On March 24, with 100's swarming in woodlands; On April 5, a female was observed nectaring on flowers on forest floor with ambient air temperature at 37°F at mid-day, with bright, warm sunshine, no wind. No doubt responding to warmer microclimate on forest floor. Worn adults last seen April 18. Captive females from March 28 oviposited freely on *Viburnum prunifolium* (the primary local host in spring), on the native *Vaccinium* species (yet to be identified) but refused to oviposit on *Cornus florida*. Larvae naturally feed on the *Viburnum prunifolium* but also accept *Vaccinium* sp. in captivity. *Cornus florida* is toxic to *neglecta* larvae (Harry Pavulaan).

Celastrina neglectamajor - Clarke County: Berrys, May 16, 2016 (Harry Pavulaan).

Celastrina lucia – LOUDOUN County (county record vouchered): Neersville, Blue Ridge Center for Environmental Stewardship, April 17, 2016 (Harry Pavulaan).

Incisalia henrici henrici – Loudoun County: Leesburg, Veterans Memorial Park; March 24, 2016. One observed in woodlands (Harry Pavulaan).

Libytheana bachmanni - Loudoun County: Leesburg, Veterans Memorial Park; March 18, 2016. Unusually early sighting for this region. Photo record (Harry Pavulaan).

Boloria bellona bellona - Rockingham County: George Washington National Forest west of Briery Branch, May 8, 2016 (Nick Grishin).

Phyciodes tharos tharos - Fauquier County: George Thompson WMA, Markham, May 16, 2016 (Harry Pavulaan). Rockbridge County: near Kerrs Creek, May 8, 2016 (Nick Grishin). Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin).

Phyciodes cocyta group (precise taxon undetermined) - Clarke County: Berrys, May 16, 2016. Two very large females captured for oviposition (Harry Pavulaan). Fauquier County: George Thompson WMA, Markham, May 16, 2016 (Harry Pavulaan). One very large male collected which matches *Phyciodes incognitus* Gatrelle. Flight date for all these otherwise somewhat early for smaller *Phyciodes diminutor*-like taxon that flies at the same location in late May.

Polygonia comma - Fauquier County: George Thompson WMA, Markham, May 16, 2016. Worn winter form (Harry Pavulaan).

Polygonia interrogationis - Clarke County: Berrys, May 16, 2016. Summer (dark) form individual observed (Harry Pavulaan). Fauquier County: George Thompson WMA, Markham, May 16, 2016. Six summer (dark) form individuals observed, unusually early for this region (Harry Pavulaan).

Vanessa atlanta - Fauquier County: George Thompson WMA, Markham, May 16, 2016.

Vanessa virginiensis - Fauquier County: George Thompson WMA, Markham, May 16, 2016. Worn winter form (Harry Pavulaan). Shenandoah County: near Forestville, May 11, 2016 (Nick Grishin).

Megisto eurytris (*sensu* Gatrelle, 2005 = *Megisto cymela* spring flight) - Rockbridge County: near Goshen, May 8, 2016 (Nick Grishin).

Epargyreus clarus clarus – Fauquier County: George Thompson WMA, Markham, May 16, 2016 (Harry Pavulaan). Rockbridge County: near Kerrs Creek, May 7, 2016 (Nick Grishin).

Erynnis juvenalis juvenalis - Clarke County: Berrys, May 16, 2016 (Harry Pavulaan). Fauquier County: George Thompson WMA, Markham, May 16, 2016 (Harry Pavulaan). Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin). Shenandoah County: near Forestville, May 7 & 8, 2016 (Nick Grishin).

Erynnis icelus - Clarke County: Berrys, May 16, 2016 (Harry Pavulaan). Rockbridge County: near Kerrs Creek, May 7, 2016 (Nick Grishin). Rockingham County: George Washington National Forest west of Briery Branch, May 7, 2016 (Nick Grishin). Shenandoah County: near Forestville, May 7, 2016 (Nick Grishin).

Atalopedes campestris huron – Rockbridge County: near Kerrs Creek, May 7, 2016 (Nick Grishin).

Poanes hobomok hobomok – Augusta County: near Deerfield, May 8, 2016 (Nick Grishin).

Poanes zabulon - Augusta County: near Deerfield, May 8, 2016 (Nick Grishin). Fauquier County: George Thompson WMA, Markham, May 16, 2016 (Harry Pavulaan). Rockbridge County: near Kerrs Creek, May 8, 2016 (Nick Grishin).

My daughter, Sandra Pavulaan and myself, conducted a 4-hour survey of butterflies on the car-accessible north end of Great North Mountain, near Hayfield, in Frederick County on April 17, 2016. This classic Appalachian Ridge is unique in that it hosts a small ridgetop remnant Pitch Pine/Scrub Oak barren with a composition not unlike the great coastal barrens of the northeast. Pitch Pines (*Pinus rigida*) and various Oaks (*Quercus* sp. – not yet leafed out) comprise the forest type here. Scrub Oak (*Quercus ilicifolia*) is the most common understory shrub in the area dominated by Pitch Pines; and Mountain Laurel (*Kalmia latifolia*) forms much of the understory beneath canopy Oaks. There is a tiny, acre-sized remnant Scrub Oak Plain, much like those found on Long Island (N.Y.). Different types of Blueberries (*Vaccinium* sp.) abound throughout all forest types here.

-*Papilio glaucus* – approximately 12 observed, mainly in the Oak canopy. All were undersized males.
-*Papilio troilus* – One undersized female was observed inspecting the forest floor.
-*Pieris rapae* – One observed flying along a roadside. Virtually no cresses or other hosts observed in this area. Likely a stray from lower elevations.
-*Colias philodice* – One observed flying along a roadside. No clovers evident in this area. Also likely a stray.
-*Incisalia augustinus croesioides* – Very common along roadsides wherever Mountain Laurel and Blueberries were present.
-*Celastrina lucia* – This area is home to a fairly large colony of 'Northern Azures'. Well over 100 adults were seen flying throughout the forest during our 4-hour survey, generally over the tops of Scrub Oaks but some came out to roadsides in the afternoon. Many were netted for confirmation. Most were of the ventrally spotted variant, but a smaller number were of the '*marginata*' form. Captive females oviposit on both *Vaccinium* sp. and *Prunus serotina* flower buds; larvae reared on *P. serotina* will eat flower buds, young fruits, leaves and *Eriophyid* mite leaf galls.
-*Polygonia comma* – One observed on the forest floor in Oak-dominant woodland. No potential hosts observed.
-*Vanessa virginiensis* – One observed flying from west to east along a roadside, landing frequently.
-*Erynnis juvenalis* – Several observed on gravel roads and roadsides, some netted for confirmation.
-*Erynnis brizo* – Very common along roadsides, well over 100 were observed during our 4-hour survey.

A return trip to the same site on Great North Mountain by myself on April 25, 2016, found generally all of the same species, most in declining numbers, but the following was noted:

-*Eurytides marcellus* – One observed flying through woodland. No Pawpaw in this area.

-*Celastrina lucia* – After a flight period of only 8 days, adults were all reasonably worn! Roughly 30 adults were seen flying throughout the forest during another 4-hour period. However, a single female form *lucia* was collected, with a well-developed ventral HW patch, the third documented Virginia record!

-*Celastrina ladon* – One individual was collected among greater numbers of *lucia*. No doubt a stray from lower down the mountain slopes where host *Cornus florida* is found.

-*Erynnis icelus* – One individual collected.

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The Southern Lepidopterists' News is published four times annually. Membership dues are $25.00 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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