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

J. BARRY LOMBARDINI: EDITOR

BUTTERFLIES PHOTOGRAPHED IN THE LOWER RIO GRANDE VALLEY

BY

MIKE RICKARD

There have been some 175 species recorded from the Lower Rio Grande Valley through the first 7 months of this year, a result of the excessive late spring rains. I've been fortunate in photographing 151 of those, including 3 Lifers.

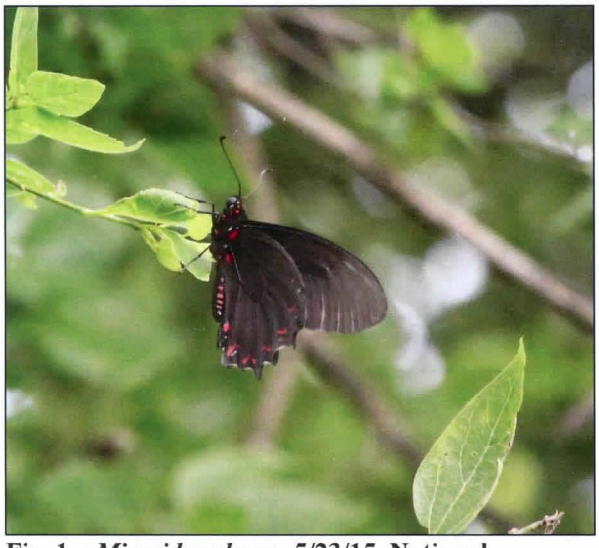

Fig. 1. ***Mimoides phaon*****, 5/23/15, National Butterfly Center, Mission, TX. Lifer for me, 3rd US sighting.**

Fig. 2. ***Papilio anchisiades*****, 6/11/15, National Butterfly Center, Mission, TX. This species has been seen regularly March-July, ranging north to Del Rio, San Antonio, and the Austin area.**

Fig. 3. *Dynamine dyonis*, 3/19/15, Santa Ana NWR, Alamo, TX. Several refuge sightings this year. This female was earlier ovipositing on *Tragia* sp.

Fig. 4. *Dynamine postverta*, 5/08/15, Mission, TX. A yard bug!

Fig. 5. *Epargyreus exadeus*, 6/29/15, National Butterfly Center, Mission, TX. Very few US records, this was one of 2 recorded in Mission this year.

Fig. 6. *Celaenorrhinus fritzgaertneri*, 6/11/15, Bentsen State Park, Mission, TX. This was a Lifer for me. Over a period of weeks 1-3 individuals could be found resting during the day in restroom alcoves at Bentsen, and 1 was found in the men's room at Santa Ana NWR.

Fig. 7. *Antigonus erosus*, 5/17/15, National Butterfly Center, Mission, TX. Lifer for me, 3rd US record, a 4th was seen in the area a few days later.

Fig. 8. *Xenophanes tryxus*, 6/01/15, Bentsen State Park, Mission, TX. This species was once a regular, circa 1960's-1990's, but quite scarce the past decade. This year they were briefly seen in Cameron and Hidalgo Co.

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SWEADNER'S JUNIPER HAIRSTREAK (*CALLOPHRYS GRYNEUS SWEADNERI*), HIGH SPRINGS, FLORIDA

BY

KATHY MALONE

IN MY YARD!!!

After a 10-year wait for my all-time favorite butterfly, a show stopper made a grand entrance in the yard during our garage sale. A friend was over helping. During one of the slack times, I gave her a tour of my yard, camera in tow. The story goes like this:

Sweadner's Juniper Hairstreak (*Callophrys gryneus sweadneri*)

As I photograph a Phaon Crescent my Irish friend Mary Lynch asks, "What's that green thing?" I figure she sees a grasshopper. She persists, "There's a green one here." Much to my delight I look up and there is a fresh Sweadner's Juniper Hairstreak right in front of my eyes! Can words express my excitement? No.

My husband and I had planted three seedling Red Cedars 10 years before, hoping this day would come. Dr. Akers Pence, a University of Florida scientist who studied *sweadneri,* quips, "They show up when you are not looking for them."

Hope and patience win again! And so does having the luck of the Irish around. Mary attracted three rare western birds to her yard only several miles from my house: The Calliope and Rufous hummingbirds, and a Western Tanager. If she can attract rare birds, what trouble is a small butterfly?

(Kathy Malone, E-Mail: zlongwing@aol.com)

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JAMES ADAMS' CHALLENGE TO THE SLS MEMBERS TO WRITE ARTICLES ON THE *"DANGERS OF LEPPING"* AND *"FIRST ENCOUNTERS"*

Thanks to James Adams for his contribution of $10 for his challenge to the membership of the SLS to write articles for the NEWS on "*The Dangers of Lepping*". Vernon Brou met this challenge with his article last issue [Volume 37 No.2, (2015), pg. 88-89] entitled "*May 17, 2015 Field Trip to Kisatchie National Forest in Louisiana*" when it rained almost constantly and Vernon "*...brushed against a plant that had thousands of long needle-like thorns that went through my knee-high socks...*". This encounter resulted in potential serious pathology to his leg.

James will contribute up to $100 for articles like Vernon's "*Dangers of Lepping*" and articles on "*First Encounters*".

Many thanks James!!!

2015 SCHAUS' SWALLOWTAIL (*HERACLIDES ARISTODEMUS PONCEANUS*) MONITORING ON KEY LARGO, FLORIDA

BY

MARC C. MINNO

The Florida Fish and Wildlife Conservation Commission, University of Florida, and the Miami Blue Chapter of the North American Butterfly Association are coordinating monitoring of the endangered Schaus' Swallowtail (*Heraclides aristodemus ponceanus* (Schaus)) and other butterflies in the Upper Florida Keys. Dozens of volunteers searched historic sites for the Schaus' Swallowtail in May and June each year beginning in 2011 and recorded the relative abundance of the various species of butterflies observed.

The larger islands of Biscayne National Park are currently the main population center of the Schaus' Swallowtail. There were 35 sightings of the Schaus' Swallowtail in Biscayne National Park in 2011, only four in 2012, 32 in 2013, and 413 in 2014 (Daniels 2014). Although northern Key Largo was formerly a major center for the Schaus' Swallowtail, this population has crashed. There were only four sightings of Schaus' Swallowtails on Key Largo in 2011 and no positive sightings in 2012 or 2013 (Daniels 2014).

Here I present Schaus' Swallowtail monitoring data for 2015. Scott Tedford with the Florida Fish and Wildlife Conservation Commission arranged permits, coordinated surveys, and compiled the monitoring data. From April 15 through June 28, 2015, a minimum of 50 volunteers spent at least 224 hours and made 378 site visits to natural areas on northern Key Largo.

Results

A total of 10,164 adult butterflies of 37 species were tallied on northern Key Largo (Table 1). The five most abundant species were the Cassius Blue, Large Orange Sulphur, Julia, Gulf Fritillary, and Zebra Heliconian, which together accounted for 75% of all adult butterflies observed. It's interesting that all three passionflower butterflies resident in the Keys are included in the top five.

Unusual species of butterflies for the Keys that were observed include a stray Clouded Skipper and Black swallowtail, a few Pearl Crescents, and a few Polydamas Swallowtails. The latter swallowtails were seen near a residential area that likely had a garden with an exotic *Aristolochia* host plant. Also a single Lyside Sulphur was seen. Although this butterfly has become a breeding resident in the Lower Keys in recent times, it appears as strays in the Upper Keys.

Imperiled species of butterflies observed include Florida Duskywing, Silver-banded Hairstreak, Florida Purplewing, Florida White, Bahamian Swallowtail, and Schaus' Swallowtail. These species are imperiled in Florida because their populations have declined to dangerously low levels. Although, the Florida Duskywing, Florida Purplewing, and Schaus' Swallowtail were relatively more abundant this year than previous, the Florida White is nearly extinct.

There were 60 sightings of Schaus' Swallowtails on Key Largo this year. In addition to natural recolonization by wild Schaus' Swallowtails, the University of Florida released 125 captive bred adults at seven sites on northern Key Largo in late May and early June and 118 larvae in late June. All of the adults released were marked, but no marked individuals were positively seen again. None of the larvae released were found again after two days of monitoring.

Discussion

I believe that no more captive bred Schaus' Swallowtails should be released into the Biscayne National Park or northern Key Largo populations at this time. The wild populations have recovered somewhat from near nothing on their own. This recovery seems to be from diapausing pupae that somehow were cued to emerge. The Schaus' Swallowtail population in Florida appears to go through cycles of a few years of abundance followed by 10 years or so of scarcity. We need research on how long the pupae diapause in nature. Releasing captive bred individuals into the wild population poses a risk that diseases could be introduced or allele frequencies altered. Captive bred individuals should be kept as a reserve in case the wild population goes extinct or used to create new populations elsewhere in south Florida.

At least 84 species of butterflies have been reported from Key Largo (Minno and Emmel 1993). Despite the intensive survey efforts by dozens of knowledgeable people, many species of butterflies were not found this year, especially formerly locally common butterflies such as the Eastern Pygmy-Blue, Martial Scrub-Hairstreak, Cuban Crescent, Miami Blue, and Zestos Skipper. This shows how degraded the Keys butterfly fauna has become and how vulnerable southern Florida's 20 or so imperiled species are to extirpation or extinction.

Literature

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Table 1. List of butterflies observed by volunteers on northern Key Largo in April through June, 2015.

FAMILY: SUBFAMILY	SCIENTIFIC NAME	COMMON NAME	TOTAL	ABUNDANCE	HABITAT	HOST PLANT AVAILABILITY
Hesperiidae: Hesperiinae	*Asbolis capucinus*	Monk Skipper	1	Very low	Forest	Available
Hesperiidae: Hesperiinae	*Hylephila phyleus*	Fiery Skipper	3	Very low	Open	Limited
Hesperiidae: Hesperiinae	*Lerema accius*	Clouded Skipper	1	Very low	Various	Limited
Hesperiidae: Hesperiinae	*Wallengrenia otho*	Southern Broken-Dash	2	Very low	Various	Available
Hesperiidae: Pyrginae	*Ephyriades brunneus floridensis*	Florida Duskywing	50	Low	Forest	Limited
Hesperiidae: Eudaminae	*Phocides pigmalion okeechobee*	Mangrove Skipper	27	Low	Forest	Available
Hesperiidae: Eudaminae	*Polygonus leo savigny*	Hammock Skipper	191	Moderate	Forest	Available
Hesperiidae: Pyrginae	*Pyrgus* species	Checkerd Skipper	2	Very low	Open	Limited
Lycaenidae: Polyommatinae	*Hemiargus ceraunus antibubastus*	Ceraunus Blue	184	Moderate	Open	Limited
Lycaenidae: Polyommatinae	*Leptotes cassius theonus*	Cassius Blue	2,067	High	Various	Available
Lycaenidae: Theclinae	*Chlorostrymon simaethis*	Silver-banded Hairstreak	5	Very low	Various	Very Limited
Nymphalidae: Danainae	*Danaus gilippus berenice*	Queen	16	Low	Various	Available
Nymphalidae: Danainae	*Danaus plexippus plexippus*	Monarch	5	Very low	Various	Limited
Nymphalidae: Heliconiinae	*Agraulis vanillae nigrior*	Gulf Fritillary	1,406	High	Open	Available
Nymphalidae: Heliconiinae	*Dryas iulia largo*	Julia	1,446	High	Forest	Available
Nymphalidae: Heliconiinae	*Heliconius charithonia tuckeri*	Zebra Heliconian	976	High	Forest	Available
Nymphalidae: Limenitidiniinae	*Eunica tatila tatilista*	Florida Purplewing	821	High	Forest	Available
Nymphalidae: Limenitidiniinae	*Marpesia petreus*	Ruddy Dagger Wing	357	Moderate	Forest	Available
Nymphalidae: Nymphalinae	*Anartia jatrophae guantanamo*	White Peacock	30	Low	Open	Limited
Nymphalidae: Nymphalinae	*Junonia coenia*	Common Buckeye	3	Very low	Open	Limited
Nymphalidae: Nymphalinae	*Junonia evarete*	Mangrove Buckeye	20	Low	Open	Available
Nymphalidae: Nymphalinae	*Phyciodes phaon*	Phaon Crescent	15	Low	Open	Limited
Nymphalidae: Nymphalinae	*Phyciodes tharos*	Pearl Crescent	7	Very low	Open	Limited
Nymphalidae: Nymphalinae	*Vanessa atalanta rubria*	Red Admiral	1	Very low	Various	Limited
Papilionidae: Papilioninae	*Battus polydamas lucayus*	Polydamas Swallowtail	6	Odd	Gardens	Very Limited
Papilionidae: Papilioninae	*Heraclides andraemon bonhotei*	Bahamian Swallowtail	2	Very low	Forest	Available
Papilionidae: Papilioninae	*Heraclides aristodemus ponceanus*	Schaus' Swallowtail	60	Low	Forest	Available
Papilionidae: Papilioninae	*Heraclides cresphontes*	Giant Swallowtail	331	Moderate	Forest	Available
Papilionidae: Papilioninae	*Papilio polyxenes asterius*	Black Swallowtail	1	Very low	Open	Very Limited
Pieridae: Coliadinae	*Eurema daira daira*	Barred Yellow	4	Very low	Open	Limited
Pieridae: Coliadinae	*Kricogonia lyside*	Lyside Sulphur	1	Very low	Forest	Limited
Pieridae: Coliadinae	*Nathalis iole*	Dainty Sulphur	14	Low	Open	Limited
Pieridae: Coliadinae	*Phoebis agarithe maxima*	Large Orange Sulphur	1,725	High	Forest	Available
Pieridae: Coliadinae	*Phoebis philea*	Orange-barred Sulphur	1	Very low	Gardens	Very Limited
Pieridae: Coliadinae	*Phoebis sennae eubule*	Cloudless Sulphur	2	Very low	Gardens	Very Limited
Pieridae: Pierinae	*Ascia monuste phileta*	Great Southern White	346	Moderate	Various	Available
Pieridae: Pierinae	*Glutophrissa drusilla neumoegenii*	Florida White	1	Very low	Forest	Available
Unknown	Unknown	Unknown	34			

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

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A SKIPPER BUTTERFLY TRAPPED BY THE INSECTIVOROUS AIRPLANT *CATOPSIS BERTERONIANA* (BROMELIACEAE) IN NORTHERN FLORIDA

BY

MARC C. MINNO

Although *Catopsis berteroniana* (J. A. Schultes & J. H. Schultes) Mez is a state listed endangered plant in Florida (Weaver and Anderson 2010), it is a common species in parts of the West Indies, Central America, and northern South America (McPherson 2007). In Florida, this species occurs naturally in only a few places in Miami-Dade, Monroe, and Collier counties (Wunderlin and Hansen 2015). It prefers to grow in full sun at the tops of small trees rather than in partial shade under the canopy.

The common name, Powdery Strap Airplant, is well applied because the bases of the green or yellowish, strap like leaves are coated with white wax, both above and below. The distinctive white wax is thought to lure insects and prevent their escape from caches of rainwater held in the rosette at the base of each leaf. Most other "tank" type bromeliads do not have the white wax. It is assumed that nutrients from the rotting insects are absorbed by the plant (Ward and Fish 1979).

Fish (1976) studied aquatic invertebrates that live in *C. berteroniana* plants and other bromeliads in southern Florida, but did not list specific terrestrial "prey" species. Frank and O'Meara (1984) compared the arthropods found drowned in *C. berteroniana* and three other kinds of bromeliads at Vero Beach, Florida, over a four week period. The four *C. berteroniana* plants used in the experiment captured 12 times more arthropods (194 total) than the other bromeliads including 2 Arachnida, 1 Isoptera, 5 Psocoptera, 1 Heteroptera, 13 Homoptera, 40 Coleoptera, 19 Lepidoptera, 89 Hymenoptera, and 24 Diptera.

A few years ago I obtained a small plant of *C. berteroniana* and it has grown to nearly flowering size in a clay pot with orchid mix media in my backyard in Gainesville, Florida (Fig. 1). On July 17, 2015, I decided to look at the plant to see if any insects had been trapped. I found single specimens of the Asian Cockroach (*Blatella asahinai* Mizukubo), Florida Carpenter Ant (*Camponotus floridanus* (Buckley)), two undetermined wasps (one small and one medium sized), and to my surprise a Horace's Duskywing skipper butterfly (*Erynnis horatius* (Scudder and Burgess)) drowned in the water in the leaf axils. The female Horace's Duskywing was completely submersed upside down with the wings folded over the back. When I removed it with forceps, it was still barely alive. I placed the skipper in a small dry plastic container, but it was dead the next day.

I wondered why a butterfly would be attracted to *C. berteroniana*. I could not detect any sweet or fragrant odor about the plant. This bromeliad is believed to attract insects via the white wax, which is highly reflective of ultraviolet light (Fish 1976, Ward and Fish 1979, Frank 1996).

As an experiment, I set out a white ceramic bowl of water in an orchid hanging next to the *Catopsis* plant on July 12, 2015, to see if insects would become trapped in this crude *Catopsis* model. As of August 2, 2015, only a small pillbug isopod had been caught in the bowl and drowned. No insects had been trapped. Also, no additional prey was found in the *C. berteroniana* plant since the day I removed the insects listed above. Additional research is needed on the kinds of insects trapped, the frequency with which they are caught, and why they are attracted to *C. berteroniana*.

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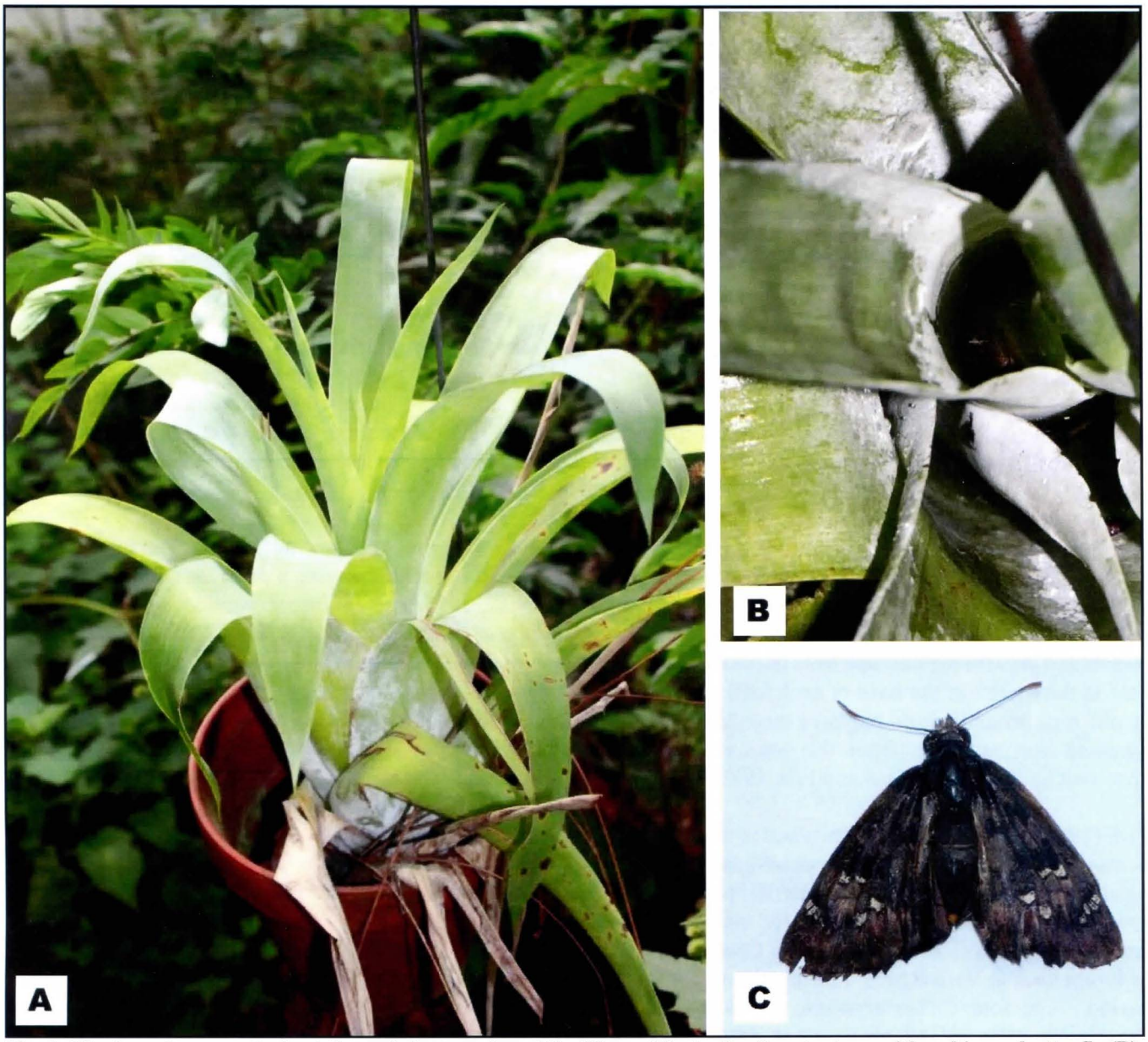

Fig. 1. The insectivorous airplant *Catopsis berteroniana* (A). View of the leaf axil water trap with a skipper butterfly (B). The female *Erynnis horatius* removed from the *C. berteroniana* trap (C).

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

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Mushrooms in Abilene, Texas (July 2015).

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LEPIDOPTERA DAMAGING CHINESE TALLOWTREE *TRIADICA SEBIFERA* (EUPHORBIACEAE) IN NORTHERN FLORIDA

BY

MARC C. MINNO

Chinese Tallowtree (*Triadica sebifera* (L.) Small, formerly *Sapium sebiferum*) is a small tree with aspen-like leaves that has been used extensively as an ornamental landscaping plant throughout the southeastern U.S. In the fall, the leaves turn beautiful shades of yellow and red. Unfortunately, birds eat the waxy fruit and spread the plant beyond yards and gardens. Chinese Tallowtree has become one of the most invasive pest plants in the Southeast. It prefers to grow in wetlands and it can quickly dominate disturbed areas as well as natural habitats. Once, a number of years ago, we had received a truckload of woodchips to use as mulch in our yard in Gainesville. Unknown to us, a seed bearing Chinese Tallowtree must have gone through the chipper. For years afterward I pulled dozens and dozens of seedlings that emerged out of the mulch, but lately I only find a few annually.

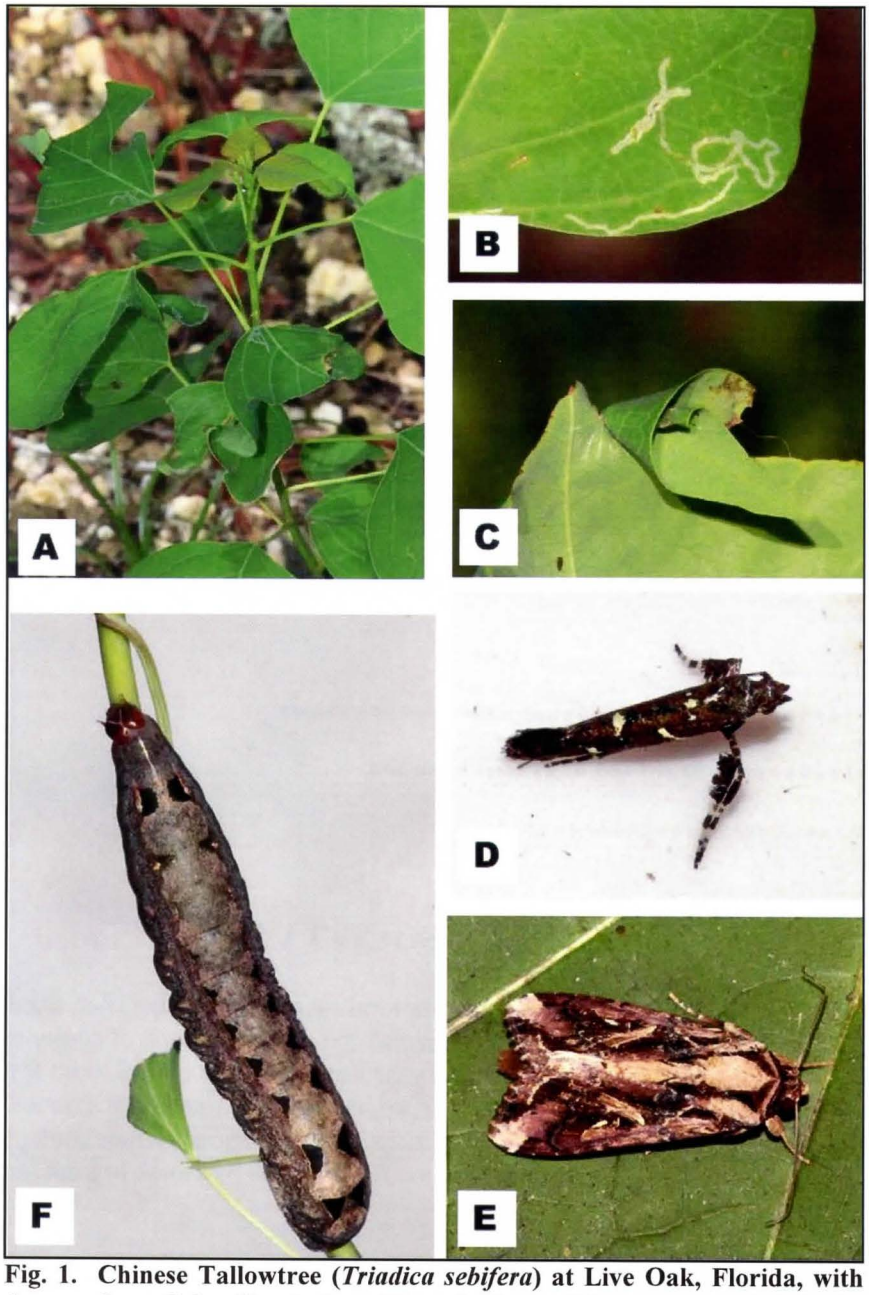

Fig. 1. Chinese Tallowtree (*Triadica sebifera*) at Live Oak, Florida, with damage from *Caloptilia triadicae* (A). A leaf mine (B), nest (C), and adult (D) of *C. triadicae*. Adult (E) and last instar larva (F) of *Spodoptera dolichos* reared on Chinese Tallowtree leaves.

Few herbivores in the U.S. eat Chinese Tallowtree. Davis *et al.* (2013) described a new species of gracillariid moth, *Caloptilia triadicae*, that is widely distributed in the southeastern U.S., but is most likely to also have originated in Asia. As noted by these authors, the larvae start as leaf miners, but later feed externally. They cut, curl, and tie a strip of leaf into a distinctive nest in which they also pupate (Fig. 1).

There is a natural pond on the grounds of the Suwannee River Water Management District in Live Oak, Florida, where I work. The pond has had excessively high water levels since Tropical Storm Debbie flooded northern Florida in late June 2012. However, due to the installation of a drainage well a few months ago, water levels have returned to normal. In June I was surprised to see seedlings and saplings of Chinese Tallowtree, some more than one foot tall, in the area that had until recently been under water. Perhaps the seeds were present in the soil waiting for the water to recede.

Nearly every one of about a dozen Chinese Tallowtrees examined in Live Oak on June 20, 2015, had leaf mines and nests of *C. triadicae*, although the damage caused to the plants was minimal. I also found a mid-sized cutworm larva eating the leaves of a Chinese Tallowtree seedling. I reared this larva on Chinese Tallowtree leaves to the adult stage. James Adams, who was working with the Florida Museum of Natural History McGuire Center moth collections this summer, kindly identified the moth as *Spodoptera dolichos*

(Fabricius). Whereas *S. dolichos* feeds on many kinds of plants as a larva, *C. triadicae* is much more specific. I have also seen the distinctive damage to Chinese Tallowtree from *C. triadicae* on saplings near Starke in Bradford County and near Hague in Alachua County.

Literature

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

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A HEARTY WELCOME TO OUR NEW MEMBERS

Susan Sarafin
199 Lindenwood Cir S
Ormond Beach FL 32174

Susan J. Llorca
309 Greenwood Drive
Panama City, FL 32407

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ABBOT AWARD

SLS members we need candidates for this year's Abbot Award. Please send your nominations to Marc Minno (E-mail: marc.minno@gmail.com).

Thanks [The Editor].

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MEMBERSHIP OF LEPIDOPTERISTS' SOCIETY ??

At the recent annual meeting of the Lepidopterists' Society it was noted that the total membership has fallen from about 1,700 members in the early nineties to just above 1,000 this year. Of special concern is the lack of students (any age and school or college grade). We have only 31 now! Dues are $45/year for adults and only $20.00 for students. I would urge those of you who are not members to join right away. Also, the Society Executive Council wishes to suggest members sponsor another person who might enjoy membership. I will personally pay student membership dues for the first 5 students whose names and addresses are sent to me from you all by email, at least for the first year. **Any takers?**

Charlie Covell

My email address is:

ccovell@flmnh.ufl.edu (or covell@louisville.edu).

I'll report in the next issue on how many took me up on this offer.

¡ TRAMPAS MAS BARATAS ! – HAMPERS IN HONDURAS

BY

DEBORAH L. MATTHEWS AND JACQUELINE Y. MILLER

For several years DLM has admired the pop-up hampers for sale in department stores, noticing how much they resemble rearing cages and bait traps — except for the open top. Very recently, however, a new variety is on the market, known as a "two way hamper" (Fig. 1). These new contraptions include both a zipper panel on the side and on one end. With our upcoming trip to Honduras with 12 students for the 2015 University of Florida Tropical Entomology class based at the Lodge at Pico Bonito (www.picobonito.com), the Monte Uyuca field station, and Escuela Agricola Panamericana Zamorano, it was only natural to want to try out these ready made traps. Spending a whopping $4.94 each, and scrounging up old shoe laces to thread through the top, small plastic mayonnaise jars (Fig. 2), disposable plastic plates, cutting boards, and some duct tape, we were able to put together workable traps with very little effort. A notched hole is cut in the paper plate (Fig. 3) through which the mayonnaise jar is inserted and taped around the tabs. The mayonnaise jar is secured in the two overlapping handles at the end of the hamper. A thin plastic cutting board is similarly notched and secured beneath the plate to extend the surface area covering the end of the trap. The cutting board can also be notched and taped to make a more bowl-like trap base. The weight of the bait in the mayonnaise jar helps balance the apparatus and at the same time retains the liquid portion of the bait even when the trap sways in the wind. Chunks of bait scooped onto the plate and paper towels continually wick fresh liquid bait out of the jar. The bottom zipper flap is left open but can be closed while retrieving or transporting specimens. Keeping the bottom zipper flap on the traps also maintains the integrity of the hamper for subsequent use as a cage (and for containing dirty field clothes).

For our trial bait we mixed yeast, warm water and Gatorade powder to set overnight. In the morning we added brown sugar, mashed bananas, a smidgen of rum, and followed up with some rotten fruit picked off the ground. Since both of us are allergic to mangoes, we opted for maggot infested remains of Malay apples (*Sysygium malaccense*) (Fig. 6, 8), which are a favorite food of the Central American agouties (*Dasyprocta punctata*) at the Lodge (Fig. 7). The bait was ripe and ready the next day.

At the Lodge, two traps were set up along the Rio Corinto. One trap was elevated about 12 ft. over the river bed and attracted *Archaeoprepona demophon centralis*, and *Morpho helenor*. The blue color of the traps was particularly attractive to *Morpho*, as was a blue foil lure tied to the riverbed trap (Fig. 4). The other trap, set 4 ft. from ground level in woods bordering the river, attracted two erebid moth species, *Selenisa sueroides* and *Coenipeta phasis*, as well as *Archaeoprepona amphimachus amphiktion*. At Uyuca, further south in a more temperate mountain climate, one trap was set up 4 ft. from the ground along a terraced grove and attracted black witches, *Ascalapha odora*, and two species of satyrine butterflies, *Hermeuptychia hermes*, and *Oxeoschistus tauropolis*. Representative images of the above species are available on Butterflies of America (Warren *et al.* 2015) and the Area de Conservacion Guanacaste website (Janzen and Hallwachs 2009).

Overall, the traps were quite functional although collectors may wish to modify the type of platform base and gap size depending on the targeted species. We plan to grab a few more of these hampers and hope the design will still be available in the coming years as we continue survey work in the tropics and add to our previous faunal records for Honduras (Miller *et al.* 2012).

ACKNOWLEDGEMENTS

We thank James Adams, The Lodge at Pico Bonito, for his continuing friendship, hospitality, and assistance with logistics for courses and survey work as well as the identification of our mystery bait fruit. Thanks also to Ronald D. Cave, University of Florida Entomology & Nematology Department, Indian River Research & Education Center, Fort Pierce, FL, Tropical Entomology co-instructor, for his expertise and patience in the realization of another successful field course and expedition to Honduras.

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1) Two way hamper display at Walmart; 2) plastic plate and mayonnaise jar used for trap base; 3) notched hole cut to insert mayonnaise jar (cut taps are taped to secure jar); 4) trap set up at riverbed site; 5) trap set up at Uyuca; 6) Malay apples; 7) a resident Central American agouti at the Lodge; 8) rotting partially consumed Malay apples used in bait.

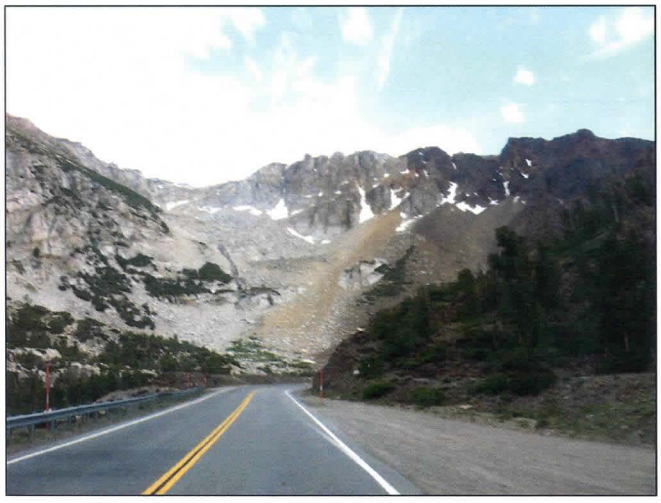
(Deborah L. Matthews and Jacqueline Y. Miller, McGuire Center for Lepidoptera and Biodiversity,
Florida Museum of Natural History, University of Florida,
P. O. Box 112710, Gainesville, Florida 32611-2710, USA)

LOOK FOR UNUSUAL MOTHS IN HIGHER ELEVATIONS

BY

KELLY RICHERS

Summer in central and southern California is little different than across the entire southern part of the United States, with the probable difference of having generally lower humidity. In the Bakersfield area, for instance, it was 106° Fahrenheit on July 29 this year, which might seem to preclude doing a lot of outdoor activities. When the heat hits so hard, it is difficult to remember that within a few hours' drive there is the potential for temperatures 50° lower, in the higher Sierra Nevada.



Route 120 toward Tioga Pass

One of the most inviting areas is not generally known, but because it is just off a main route into Yosemite National Park, it is worth visiting. If one drives north on Route 395 up the Owens River Valley, and passes the June Lake Loop, just before Mono Lake there is a turn to the west (Rt. 120) that leads to Tioga Pass (9,943'). This area is known as Lee Vining, and there are also campsites along Rt. 120 at the lower elevations for those who would like to possibly camp or fish in that area along Lee Vining Creek. Although there is a large sign indicating that you will be facing the fees to enter Yosemite National Park in 12 miles, before that is reached there is a turn to the north that leads to Saddlebag Lake. This lake only looks like a saddlebag if you have had many beers or some such, but that is the name…

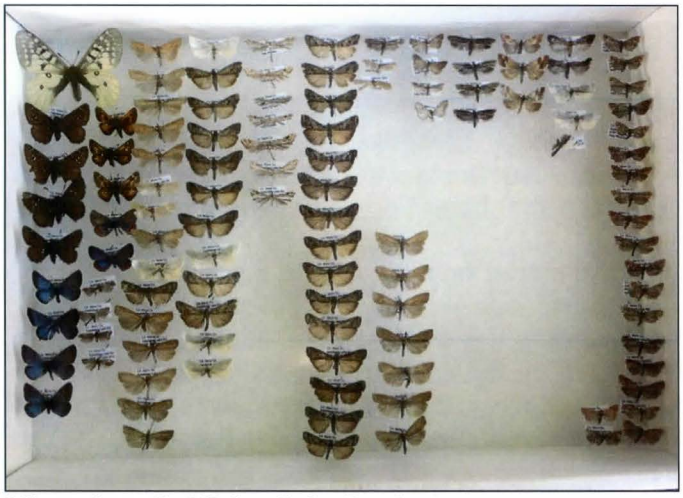
The road to Saddlebag Lake is not paved for most of the route. Short sections are paved, but that was probably to prevent sliding into the gullies on primarily the west side of the road. This road starts at about 9550' elevation at the juncture with Route 120 and rises to about 10,125' near the lake, along a total stretch which is probably about 8 miles in length. Along the road there are several locations for pullout collecting of butterflies and day flying moths, and several other places where reasonable access to the stream flowing on the west side of the road is available.

Blacklight trap set next to Saddlebag Creek at about 9600'.

For day collecting, the author suggests going to where the campers park along the west side at 9800' elevation. Day parking is not allowed in the very small parking lot, but there are parking turnouts just beyond that parking lot that suffice for the day collector. A short walk down the dirt road on the west side will result in excellent butterfly and day moth collecting in most years. *Thorbes diversus, Polites sabuleti tecumsa, Polites sonora sonora, Parnassius clodius baldur, Parnassius phoebus behrii, Colias behrii, Lycaena cuprea cuprea, Gaeides edith edith, Chalderia rubida rubida, Plebejus saepiolus saepiolus, Icaricia shasta shasta, Agriades franklinii podarce, Polygonia zephrus, Speyeria mormonia mormonia, Charidryas damoetas malcolmi* and *Occidryas editha nubigena* have all been taken by the author between June 26 and August 3 in this particular location. Keep in mind that a real butterfly studier would see and possibly collect more species than the author, an inveterate moth person.

Although the author has spent several pleasant afternoons collecting in this exact area during daylight hours, he had never set traps or collected from a sheet in this area, having never spent the night at this elevation camping. On June 26, 2015, the author set four ultraviolet traps at various locations along this road within site of the riparian habitat and the coniferous forest bordering the road. Elevations ranged from 8900' to 9600', and traps were at the western side of the road. Temperatures in the daytime were in the 85° range, and they dropped to

about 50° or lower during the night. The area has a number of day hikers, and sunset comes late to this area, so these traps were set after 8 p.m. to avoid too many inquisitive persons exploring the traps.



Micros from Saddlebag Lake Road.

Geometrids from Saddlebag Lake Road.

Noctuids from Saddlebag Lake Road.

At about 6 a.m. the next morning the traps were recovered. All traps were undisturbed and had operated correctly. This would qualify as an unmitigated success already, and the fact that many of the moths appeared to be different from those collected regularly at June Lakes, which the author visits every couple of years, (elevation 7500') was a great bonus. Not all of the individual moth species are yet identified for this article, as they are numerous, but could be made available in about another month to interested readers. E-mail Kelly Richers at kerichers@wuesd. org for a list.

Trout from Lee Vining Creek.

The contents were sorted and spread over the next month, and photos are accompanying this article which show the variety. A quick partial list of moths taken, and included in the photos attached, would be: *Eucosma ponderosa, Eanax georgiella, Pyrausta unifascialis unifascialis, Catastia actualis, Digrammia hebetate, Neoterpes trianguliferata, Hydriomena perfracta monoensis, Perizoma oxygramma, Anarta farnhami, Agrotis vancouverensis, Agrotis oblique*, and *Diarsia rosaria*. Many identifications have not been done yet.

California has a huge population of campers and outdoors people, and locating an area such as this on a weekend where things are away from people is not always easy. This area seems less known than the area further west toward Tioga Pass, and thus has fewer people visiting.

One of the major attractions/challenges for this area would be the variable weather. Over the next week after the author visited the area, in the middle of the historic California drought, it rained three times in this exact area, and one night two inches of snow fell, the week of June 30! Timing is everything in this area.

As the temperatures soar in your area, consider a visit to the higher elevations out west for some unusual species and some interesting cooler experiences.

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

A VISIT TO THE TRIPLEHORN INSECT COLLECTION AT OHIO STATE UNIVERSITY

BY

F. MATTHEW BLAINE

My wife and I were visiting Ohio State University in October, 2013, for a meeting there. The meeting was of The Ohio Valley Unified Malacologists, (OVUM) where I was going to give a Power Point presentation on my research of "*The freshwater mussels of Sussex County, Delaware*". The meeting was hosted by my friend G. Thomas Watters who is Curator of Molluscs, Department of Evolution, Ecology and Organismal Biology, The Ohio State University. We got to the building early and walked down the long corridors (Fig. 1) trying to locate the mollusk collection. On our way, we passed a sign on the wall (Fig. 2) that said "Triplehorn Insect Collection"! I spent several minutes there reading the bulletin board (Fig. 3) about their current project of replacing and fitting the collection with new cabinets

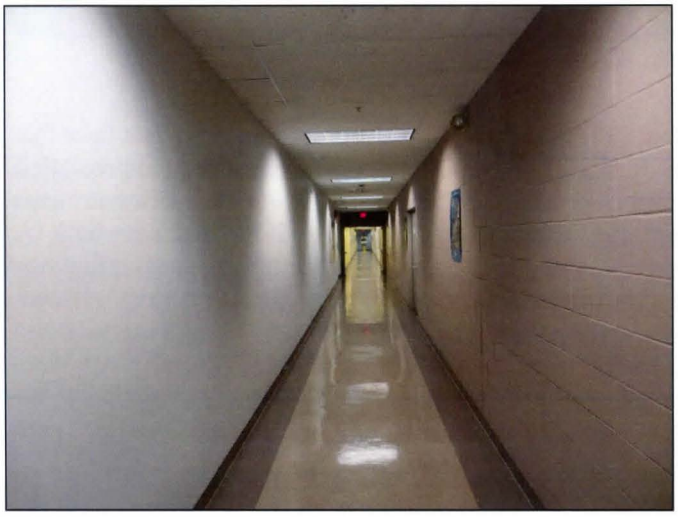


Fig. 1. The long corridor

Fig. 2. Triplehorn Collection door

Fig. 3. Current Project Poster

Fig. 4. Current Project Poster number two

and type trays (Fig. 4). But the door was locked, so we continued on down the hall and found Tom who graciously showed us the massive collection of which he is in charge (Fig. 5, 6). As it turns out, Tom was trained as an entomologist so he too knows what it is like to have keen interests in insects and molluscs.

I asked Tom about the insect collection and told him that I would love to be able to take a tour of it. To my delight he said that he would take us down and see if he could get us in. We were in luck! Tom introduced us to Luciana Musetti, Curator, Triplehorn Insect Collection who took it from there.

Luciana specializes in parasitoid wasps and she was overseeing a project to make high-resolution stacked photographs

Fig. 5 and 6. G. Thomas Watters. The huge mollusc collection at OHSU

Fig. 6.

Fig. 7. Original drawers built by prisoners for the collection

of their collection. The photographs are incorporated in a data base that can be accessed by interested parties. She also has a keen appreciation for the beauty and complexity of Lepidoptera. As she pulled drawers from the cabinets she explained that the original drawers were built by prisoners and were provided with a space surrounding the center that was filled with para dichlorobenzene to protect the collection from museum pests (Fig. 7). The drawers are beautifully constructed of hardwood and have lasted for many years. They are now being housed in modern stacking cabinets and the collection is protected from dermestid beetles and other pests by freezing protocol. No more smelly para dichlorobenzene for researchers there.

We started looking through some of the drawers that were prepared by Joseph and Dorothy Knull. Both were outstanding collectors. They added many specimens to the museum, both in volume and in diversity. One of their contributions was placing the caterpillar skins in the same drawer with the eggs, chrysalis, and the imago (Figs. 8-10).

Due to the overhead lighting and glass top drawers, it was extremely difficult to get photographs without reflections on the glass even after maneuvering around for the best angle. Here are a few more of the photographs (Figs. 11-14).

The Ohio State Insect Collection is composed of many private collections which were incorporated by Dr. Josef Knull and form the nucleus of the collection.

The collection provides space for the Ohio Lepidopterists which is housed in 24 cabinets but it's most important collections are of Homoptera with more than 1,700 primary types. According to Lucinda, "The history of the collection goes back quite a long way. There were several faculty who helped build the collection, starting with James S. Hine (hired in 1894, worked with Diptera and his collection is here at OSU) and Herbert Osborne (hired in 1898. His collection of Hemiptera was very large & is deposited here at OSU), among others.

Later came Dwight DeLong (hired in 1921. One of the largest collections of leafhoppers in the country and the world, deposited here at OSU), Frank Fisk (1949; cockroaches), and of course, the Knulls (1934; they collected everything, but Joe specialized in beetles, and Dorothy in leafhoppers) and Triplehorn (1957; beetles)."

Acknowledgements and Credits

G. Thomas Watters for facilitating our visit to the entomology department.
Luciana Musetti for showing us the collection and for all of the additional information.

Fig. 8

Fig. 9

Fig. 8-10. Drawers prepared by Dr. Joseph Knull and Dr. Dorothy Knull featuring full life cycle specimens

Fig. 11-14. More drawers of Lepidoptera in the collection

Fig. 10

Fig. 11

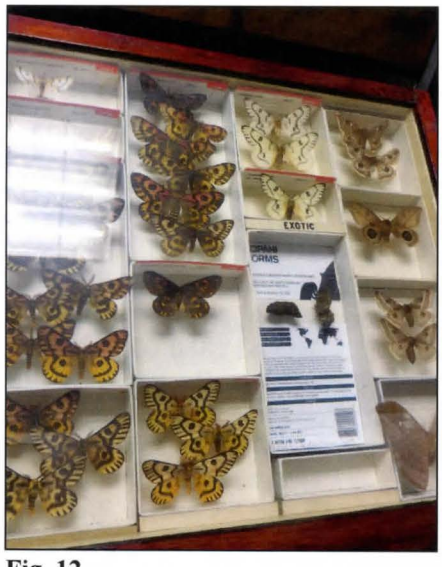


Fig. 12

Fig. 13

Fig. 14

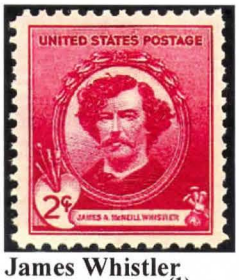
(F. Matthew Blaine, 908 West Street, Laurel, Delaware, 19956-1932 - USA; E-mail: mattblaine@earthlink.net
Curatorial Associate, Delaware Museum of Natural History
Research Associate, The Florida State Collection of Arthropods
Research Associate, The McGuire Center for Lepidoptera and Biodiversity at the Florida Museum of Natural History, University of Florida)

JAMES MCNEILL WHISTLER — "THE BUTTERFLY SIGNATURE" OR "WHISTLER'S BUTTERFLY"

BY

J. BARRY LOMBARDINI

James Abbott McNeill Whistler [1] was born in Lowell, Massachusetts, in 1834. His early (1842) childhood was spent in Russia (St. Petersburg) where his father was employed as an engineer by the railroad. Whistler and his family (minus his father) moved to London in 1847-1848. Both in Russia and England Whistler became interested in art and photography. In 1851 he enrolled in the United States Military Academy at West Point where his father had been an art teacher and some of his other relatives had attended. His time spent at West Point was not without problems as he performed poorly which was reflected in his grades and he did not tolerate authority. Robert E. Lee was the West Point Superintendent at this time and had no choice but to dismiss Whistler after 3 years.



James Whistler (Issue of 1940)[1]

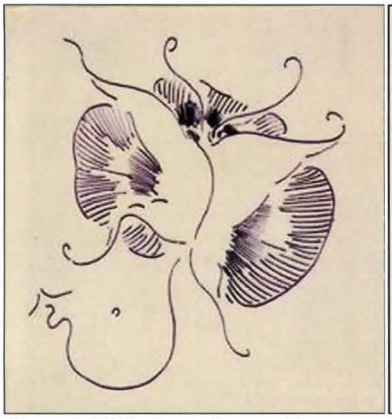
After West Point Whistler moved to Paris in 1855 and studied art at the Ecole impériale and also under the tutelage of Charles Gleyre who taught Whistler two principles "*...line is more important than color and that black is the fundamental color of tonal harmony.*" [1] [The impressionists did not agree with this philosophy for the art world and believed in just the opposite, *i.e.*, color is more important than form and black is a "*forbidden color*".]

In the early years of his career Whistler sold little and was always in financial trouble but by 1858 his situation started to improve in that he was starting to be recognized in the art world for his talents, and he made many influential friends who were talented and established artists.

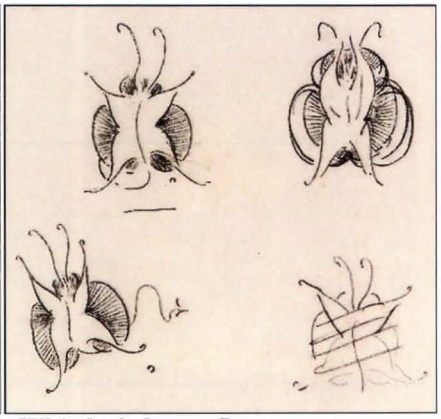
Whistler's Mother (1871) [1]

One of his most famous paintings (1871) was of his mother referred to as "Whistler's Mother". There are at least two different stories concerning the model for this painting. The first being it really was his mother who replaced a model who did not show up for the sittings. The second story is that the model is a neighbor of Whistler's who replaced his mother when she grew tired and weak and could not model. [6]

So what about the "Butterfly Signature"? Whistle first starting experimenting with an alternate signature in the 1860's and by 1877 he incorporated his initials "JW" into his monogram signature.



One of Whistler's butterfly monogram signatures [4]



Whistler's butterfly monogram signatures: four butterflies [3]

H. Barbara Weinberg, The Metropolitan Museum of Art, stated that *"Whistler invented a monogram signature - a stylized butterfly based on his initials - and always placed it deliberately as a compositional element, not just a maker's mark."* [2]

As time went on Whistler experimented with his monogram signature and there were many forms. Around 1880 when involved in a libel trial with John Ruskin, an art critic who severely criticized his paintings "*...he added a stinger to the butterfly image to create a mark representing both his gentle, sensitive nature and his provocative, feisty spirit*". [1] James Abbott McNeill Whistler died in 1903 and is considered to be one of the "*most famous, controversial and influential painters of his time.*" [5]

1. http://en.wikipedia.org/wiki/James_Abbott_McNeill_Whistler
2. http://blogs.loc.gov/picturethis/2013/06/whistlers-butterfly/
3. http://www.asia.si.edu/explore/american/butterfly.asp
4. http://sometimesdoodles.tumblr.com/post/50545336143/artemisdreaming-above-whistlers-butterfly
5. http://www.bbc.co.uk/arts/yourpaintings/artists/james-abbott-mcneill-whistler
6. http://en.wikipedia.org/wiki/Whistler%27s_Mother

ACRONICTA OBLINITA (NOCTUIDAE: ACRONICTINAE) LARVAL HERBIVORY ON PICKERELWEED (*PONTEDERIA CORDATA*) INFLORESCENCES

BY

LANCE A. DURDEN

Pickerelweed (*Pontederia cordata*) blooms are highly attractive native nectar sources for many adult insects in eastern North America including many species of butterflies (Glassberg *et al.*, 2000). Because pickerelweed grows in wet or marshy areas, it often occurs in habitats where marsh skippers co-occur. Therefore, lepidopterists often scan pickerelweed blooms for several species of skippers that frequent these habitats including *Poanes viator* (broad-winged skipper), *Poanes yehl* (yehl skipper), *Poanes aaroni* (Aaron's skipper), *Euphyes pilatka* (Pilatka skipper), *Euphyes dion* (Dion skipper), *Euphyes dukesi* (Duke's skipper) and *Problema bulenta* (rare skipper).

Fig. 1: Final instar *Acronicta oblinita* larva on pickerelweed (*Pontederia cordata*): lateral view of larva.

Fig. 2. Final instar *Acronicta oblinita* larva on pickerelweed (*Pontederia cordata*): dorsal view of larva.

On 20 May 2015, marsh skippers nectaring on pickerelweed blooms adjacent to highway 17 about 2.5 miles south of Darien, in Glynn County, Georgia (USA) were recorded. During approximately two hours of searching, one male *E. pilatka,* one male and one female *E. dukesi*, one male *P. bulenta,* thousands of *P. viator*, and three very colorful final instar noctuid moth larvae (Figs. 1, 2) were recorded. All three larvae were feeding on the pickerelweed inflorescences on plants that were rooted in, and surrounded by, standing water. One larva was collected (Georgia DNR Scientific Collecting Permit # 29-WJH-15-176) and transferred to a pickerelweed plant in the author's yard for rearing to adulthood. The larva fed on pickerelweed blooms and leaves until 23 May and started spinning a yellow cocoon (Fig. 3) on 25 May among the mesh sleeve that confined it to the foodplant. The adult moth, *Acronicta oblinita* ("smeared dagger") (Figs. 4, 5), hatched on 12 June.

Fig. 3. Cocoon constructed by final instar *Acronicta oblinita* larva.

Wagner *et al.* (2011) state that larvae of *A. oblinita* are widely polyphagous and occur in a variety of open, usually moist to wet habitats, feeding on many forbs such as smartweed, shrubs and small trees including some conifers. Heppner (2003) provides a list of 33 larval foodplants for *A. oblinita* including *Pontederia lanceolata* which is currently treated as a junior synonym of *P. cordata.* Covell (1984) stated that the larva ('smartweed caterpillar") of *A. oblinita* is a pest of apple and other fruit trees and has also been reported from clover, corn, cotton, elms, grasses, pines, oaks, smartweed, strawberry plants and willows. *Acronicta*

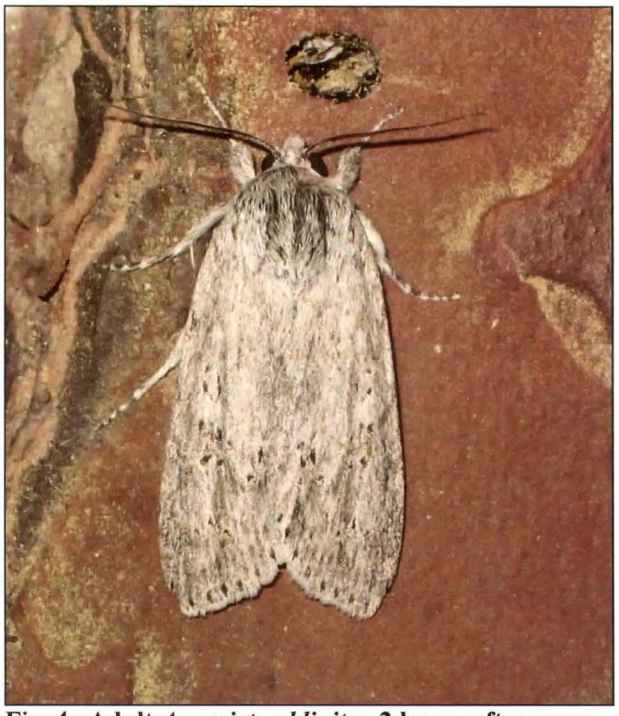


Fig. 4. Adult *Acronicta oblinita* ~2 hours after emergence from pupa and cocoon.

Fig. 5. Pinned and spread adult *Acronicta oblinita* from larva in Figs. 1 and 2.

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oblinita is widely distributed in eastern North America from southeastern Canada south to Florida, Louisiana and Texas (Heppner, 2003: Brou, 2011, Wagner *et al.*, 2011); it has also been recorded from British Columbia (Heppner, 2003).

In conclusion, biologists searching pickerelweed blooms for adult Lepidoptera, may also encounter the colorful and distinctive larvae of *A. oblinita.*

Thanks are extended to John Hyatt who arranged the visit to the pickerelweed sites in coastal Georgia and co-located the *A. oblinita* larvae and marsh skippers.

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(Lance Durden, Department of Biology
Georgia Southern University
4324 Old Register Road
Statesboro, Georgia 30458, USA
E-Mail: ldurden@georgiasouthern.edu)

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Wildflower or weed? (Abilene, Texas) (photo June 6, 2015)

"Strange" Mushroom (Abilene, Texas) (photo June 6, 2015)

HOW MIGHT A BLACK WITCH MOTH APPEAL TO HALLOWEEN FOLKLORE?

BY

BILL LINDEMANN

One might not expect a moth to be included in the usual cast of Halloween characters considered spooky or frightening such as skeletons, ghosts, goblins, witches, bats, owls and spiders. I would offer that a large tropical moth, *Ascalapha odorata*, the Black Witch, possesses a number of haunting credentials that cause many people living in Mexico, Central and South America and Caribbean countries to put this insect at the top of the list of frightening symbols. The Black Witch moth is commonly found in the central region of the Western Hemisphere; however, whether by migration or wandering, this moth can be regularly found from south Florida and south Texas northward to the Canadian border and westward covering most of the lower 48 states. The moth was introduced in Hawaii.

Ascalapha odorata is a member of the family *Noctuidae* and is the largest moth, possibly the largest insect, in North America with a wingspan of 16 centimeters (6 to 7 inches). Although described as being black, these moths with pointed forewings are brown to dark gray with intricate patterns of lines and blue to purple colors. The darker male has two spots shaped like a "paisley" number nine (9) on the top side of the forewing. The female has lighter pink-colored postmedial lines extending from the forewing to the hindwing.

The Black Witch moth can easily be confused with bats with its size, dark color, nocturnal flight and fluttery bat-like wing beats. The moth's ominous appearance and similarity to bats sparks fear into the minds of people who consider night creatures as being sinister and harmful. Fear of the dark and its creatures has existed for eons of time and became embedded in our imagination, literature and art. When humans do not understand the roles and purposes of night creatures, anxiety is created about the unknown.

The Black Witch moth, like most moths, is attracted to lights in houses during darkness and often can be found resting under the eaves of houses during the day. When one of these moths enters a home in Mexico through an open door or window, the occupants remember the folklore tales passed down from preceding generations of family members that these creatures are known as the *Mariposa de la Muerte*, the Butterfly of Death.

This particular folklore history, dating back to the times of the Aztecs, contends that if the Black Witch moth enters a house of an ill person, the person will die. Interestingly in the Lower Rio Grande Valley the severity of this moth's mission has been softened to imply that the moth must visit all four corners of the house before death is imposed on the ill victim. Variations of the details of this moth's perceived hex varies by country and region, but is held in some form as strong superstitious beliefs among the people.

Black Witch (*Ascalapha odorata*)

From the scientific perspective, the Black Witch moth is just one species among over ten thousand species found in North America and is not attached to any mystic power as believed by many people in the central region of the Western Hemisphere. Whether famous or infamous, this moth has attained notoriety that sets it apart from all of its thousands of relatives.

Entomologists believe that the rainy season in June in Mexico and Central America, triggers this noctuid to begin its northward migration (possibly straying or wandering) into Florida and Texas and westward. Their nocturnal flights can be over both land and water, sometimes being caught up in hurricanes over the Gulf of Mexico and the Caribbean Ocean. Although the adults feed on rotting tropical fruit, females lay eggs on various members of the legume family (*Cassia, Acacia, Robinia and Gymnocladus dioica*) for their larva to consume. The moths use the overlapping generation method similar to that used by Monarchs to move great distances, despite having a fairly short life span.

Although this moth has no known mystic powers, scientists believe that this nocturnal moth has evolved to have the ability to detect the echolocation sounds emitted by bats and thus avoid becoming prey to a hungry bat. It seems almost surreal that an insect having some visible similarities to bats has found a way to avoid capture by one of its predators, bats.

How might a Black Witch moth have an appeal to qualify as a participant in our Halloween folklore? Consider that it is an alien, a creature of darkness, can be confused with bats and has the moniker "Butterfly of Death." It could be the "Spook of Lepidoptera."

(Bill Lindemann, E-mail: billin2@beecreek.net)

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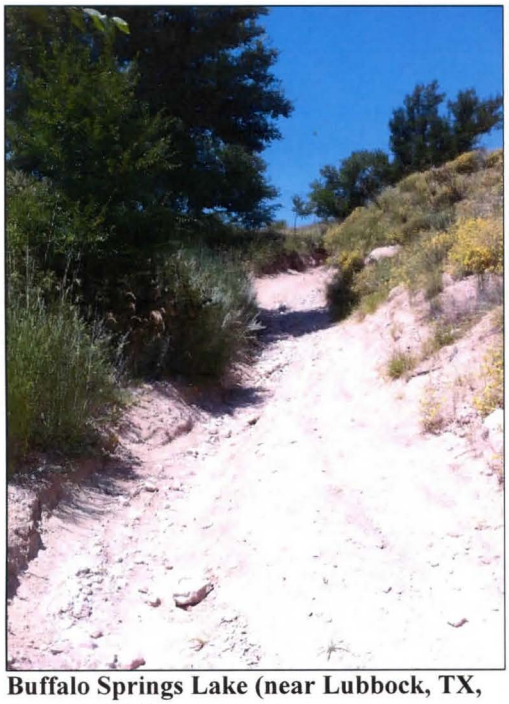
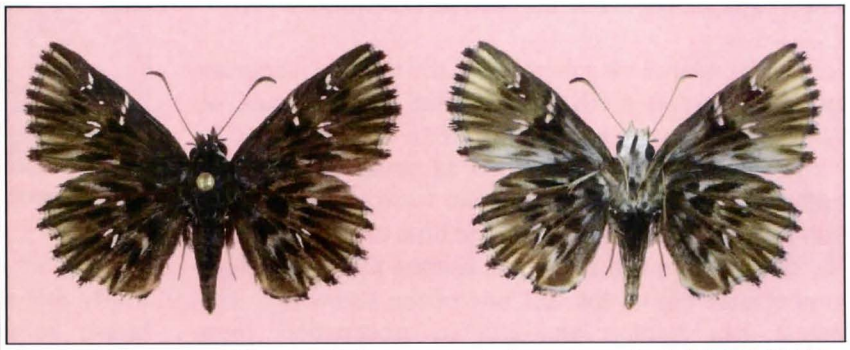
COMMON STREAKY - SKIPPER (*CELOTES NESSUS*) AT BUFFALO SPRINGS LAKE, NEAR LUBBOCK, TEXAS

BY

J. BARRY LOMBARDINI



Buffalo Springs Lake (near Lubbock, TX, August 2015)



Common Streaky-Skipper (*Celotes nessus*), dorsal, ventral (28-IV-2015).

The Common Streaky-Skipper (*Celotes nessus*) was not found for many years between 25-V-1997 and 10-IX-2014 even with fairly numerous surveys of the Buffalo Springs Lake area during this time span. However, two specimens were collected in September of 2014 (17 years since 1997) and then starting in April of 2015, 2-3 were observed flying on many occasions when visiting the lake. These Skippers were flying at least until August 6, 2015, on a weekly basis.

The Common Streaky-Skipper is relatively easy to catch at Buffalo Springs Lake in that it usually flies in the open along a path, about 1-3 feet above the ground, and close to the vegetation.

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METAMORPHOSIS BRAZILIAN - STYLE

BY

CRAIG W. MARKS

I had not seen a Brazilian Skipper (*Calpodes ethlius*) until November 1, 2013, at Rip Van Winkle Garden on Jefferson Island in Iberia Parish just before the start of my oldest nephew's wedding. The wedding was to start at 5:00, and I had been required to have my father there for pictures at 3:30. So, while the wedding party posed for pictures in the warm afternoon sunshine, I walked around the gardens, noting eight species in about an hour. While most of the skippers turned out to be Ocola Skippers, at around 4:15 I saw a very large, light brown skipper that I immediately recognized as a Brazilian. It was taking nectar at *Odontonema strictum* or "firespike", and allowed me to approach close enough for a photograph (right)

Iberia Parish, 11/01/13

In Louisiana, as elsewhere, this large skipper uses all kinds of Canna as its larval food plant. Ross and Welden (2003) listed "canna lilies." It was reported to be found on Canna on several Metro New Orleans NABA Counts, on *Canna indica* on the 1997 Bonnet Carre Spillway Count (with nine found on it) and then on yellow canna lilies on a Cameron Count. Michael Lockwood reported (by e-mail) that it is common on Grand Isle near Canna. He further indicated that he has raised adults from the numerous pupae that were found on that island. In Louisiana's Florida Parishes, Vernon Brou advised that at one time he had planted a great deal of Canna on his property in St. Tammany Parish, and this skipper became common. In the northern portion of the State, Trahan (2009) reported it from Caddo Parish with individual sightings in July, late September and early October. In fact, Trahan communicated to me in 2012 that he had eggs, caterpillars, chrysalises and adults on Canna that he had grown in his yard. I include pictures he sent me from his yard. This skipper has been recorded in 13 of Louisiana's 64 parishes.

Caddo Parish, 7/31/12 (J. Trahan)

Dorsal view, Caddo Parish (J. Trahan)

Since that first sighting, I have seen adult skippers twice, ever so briefly, in Lafayette Parish, once at a local nursery with ornamental canna for sale. The second time was in a home garden with canna plants. It is a wary skipper with a very rapid flight, rising and falling in a quick, undulating fashion. Cech and Tudor (2005) suggested that this skipper is easier to locate as a caterpillar than as an adult, and that has been my experience as well. I found caterpillars at stands of Canna in both Iberia and Lafayette Parish during the summer in 2014, extending into September. The distinctive way that the caterpillars fold the Canna leaves as a cover during daylight hours is very easy to identify. As the caterpillars grow, the size of the piece of leaf folded increases as well, making the caterpillar's presence even more apparent.

Section of canna leaf folded by a Brazilian Skipper (J. Trahan)

I have monitored caterpillars in the past, including Monarch, Pipevine Swallowtails, Black Swallowtail and Gulf Fritillary caterpillars feeding in a couple of gardens that I had created. I had planted tropical milkweed, Dutchman's pipe, dill and passionvines specifically to

attract those butterflies, but I have not previously made any effort to raise caterpillars. My impressions during 2014 were that Brazilian Skipper caterpillars are heavily hunted by predators. Specifically, I noted that the stands of canna with the caterpillars present were constantly patrolled by numerous red wasps and Anole lizards. In fact, I found that most of the folded leaves had holes, apparently chewed by the wasps, and the caterpillars had disappeared (see below left).

Folded leaf with holes chewed in fold

So, in 2015, I decided to transplant some of the caterpillars into a terrarium. It was not until July 1, that I found one at a stand of canna in Iberia Parish. It was probably a fourth instar caterpillar, that had already turned green. I placed it in a small terrarium, kept in a sun room at room temperature, and provided fresh canna leaves every 24-48 hours. I placed a paper towel in the bottom, and had to clean that paper towel daily as that (and subsequent) caterpillar(s) generate a lot of frass. On July 7, I found two more caterpillars, also in Iberia Parish. Both were clearly in one or more of the earlier instar stages.

Final instar

Early instar

Early instar

For a short time I had three caterpillars in the terrarium, each on a separate leaf. They hid within their folds during the day, and fed at night. During those times I was able to watch them feed, they consumed the leaf while partially still inside the fold. I rarely found them entirely outside of those folds, except when it was time to molt to the next instar. The first caterpillar enclosed on July 14 (see picture above), wrapped in silk inside a partially consumed leaf and remained so for between 8 to 9 days. Just before emerging, the pupa's color changed from bright green to mostly yellow within the last 24 hours before emergence and then mostly black immediately before emergence. A large female emerged on July 22.

Pupa

The second caterpillar to enclose did so on July 23. I had just cleaned the terrarium, removing the old leaves. This second caterpillar ended up rolling part of the paper towel at the bottom of the container and, as with the first, wrapped itself in silk inside the roll. I noticed that for each molt, at enclosure and at emergence, there was a noticeable amount of brown fluid discharged, evidenced on the paper towels. The second caterpillar was another female which emerged on August 1. The next day, the final caterpillar enclosed, this one rolled up in the last leaf on which it was feeding. It emerged on August 11 as a male.

So, I ended up three for three. I don't know if that was simply beginner's luck or if the success rate actually climbs to that level in a controlled, protected environment. I had, before this experiment, read several sources that described in detail the molting and pupation processes, but I must admit actually participating during those processes

is much more illuminating. I certainly now have a much better understanding of the perils faced by caterpillars in the wild, and a greater appreciation of the metamorphosis process.

Sources

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

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THE 64TH ANNUAL MEETING OF THE LEPIDOPTERISTS' SOCIETY TO BE JULY 6-10, 2016, AT FLORISSANT, COLORADO

The 2016 Annual Meeting of The Lepidopterists' Society will be held from Wednesday, July 6, to Sunday, July 10, at The Nature Place, a superb conference center sponsored by the Colorado Outdoor Education Center and located near the tiny town of Florissant at 8800 feet elevation, a few miles west of Pikes Peak in the Colorado Rockies. Beautiful facilities, an incredible mountain environment of flower-filled meadows and pine-fir forests, an amazing diversity of Lepidoptera, and cool summer weather combine to make a perfect meeting site where you can step out your front door to be immersed in Nature while enjoying a fantastic meeting in a most relaxing and fun-filled atmosphere with your fellow lepidopterists.

The setting is exceptional, the food is superb, and The Nature Place staff will help to make this an outstanding meeting, one that your family will enjoy and one in which you can collect, photograph, and watch many of Colorado's almost 300 species of butterflies around you while walking to the spacious lodge or spending each night at the moth sheets with well over 1,000 species of nocturnal Lepidoptera potentially flocking to your lights.

The organizing committee, including Tom Emmel, Jackie Miller, Charles Covell, Andrei Sourakov, Andy Warren, and Todd Gilligan (and growing daily) is already planning an outstanding program of papers and field trips. So set these dates aside now for the "Lep Soc Meeting" in your 2016 calendar and travel plans. We will be doing a direct mailing in late September to every Lepidopterists' Society member (and several other lepidopterist organizations that are interested in participating jointly), which will include full information for early registration, facilities available, activities, and an invitation to participate in the program. These items will also be placed online for ease of reference and access. It is anticipated that travel grants and student support will be available by application so that younger members especially can be encouraged to pursue attending this meeting where as many as 200 avid, knowledgeable and highly enthusiastic lepidopterists will be helpful mentors!

Come one, come all! Plan now to attend.

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RECENT VISITOR TO VERNON & CHARLOTTE BROU AT THE ABITA ENTOMOLOGICAL STUDY SITE

BY

VERNON ANTOINE BROU JR.

Fig. 1. Brennan Landry (left), and Vernon A. Brou Jr. (right), and Charlotte Brou (behind camera) on Saturday July 25, 2015.

Brennan (Fig. 1) is 32 years old, married and has 2 children. He is employed as a QC manager at an industrial analytical quality control laboratory. Brennan and his family live in Port Allen, West Baton Rouge Parish.

Up until now Brennan's entomological interest has been directed at carabid and tiger beetles. The purpose of Brennan's visit was to learn how to study and collect clearwing moths (Sesiidae).

Brennan took a series of photos while going over the collection of Louisiana lepidoptera. Two of them are Fig. 2 and Fig. 3.

Fig. 2. Cornell drawer of *Sannina uroceriformis* Wlk.

Fig. 3. Cornell drawer of *Paranthrene simulans* (Hy. Edw.).

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

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SICKLE - WINGED SKIPPER (*EANTIS TAMENUND*) LIFE HISTORY

BY
BERRY NALL

A yellow dot on a 6" seedling of Lime Prickly-Ash, *Zanthoxylum fagara,* proved to be a butterfly egg, and I was soon raising a Sickle-winged Skipper caterpillar. As the pictures to the right show, the caterpillar's head was clearly visible in the egg a day before it emerged. The yellowish face soon became black, and then olive as the caterpillar matured.

Like many skippers, the caterpillar sewed several leaves together to make a shelter. It would stay in a given shelter until I decided the leaves needed to be discarded because they were too deteriorated and in danger of becoming moldy. It would then form a new shelter on the fresh branches I provided.

The caterpillar took 25 days to pupate; the adult emerged 11 days later.

Egg, 26-IX-2010

Pre-emergent; head visible, 29-IX-2010

Fresh caterpillar, 30-IX-2010

Second instar, black face, 3-X-2010

9-X-2010

Pre-molt, 11-X-2010

New instar, head now green, 12-X-2010

18-X-2010

Mature caterpillar, 24-X-2010

Fresh chrysalis, 26-X-2010

Chrysalis, 30-X-2010

Fresh Sickle-winged Skipper, 5-XI-2010

The SL Society and the Editor thank Mr. Berry Nall for allowing us to reprint his life history of the Sickle-winged Skipper *(Eantis tamenund*) in the SLS NEWS. The original publication on the internet is listed: http://leps.thenalls.net/content2.php?ref=Species/Pyrginae/tamenund/life/tamenund_life.htm

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

[Note: Caterpillars were all raised at Mr. Nall's home in Falcon Heights, Texas.]

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Caprock Canyons State Park nr. Quitaque, Texas (August 22, 2015)

MEXICAN BLUEWING (*MYSCELIA ETHUSA*) LIFE HISTORY

BY

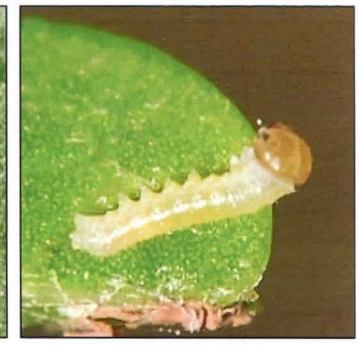
BERRY NALL

The caterpillar of this study came from an egg I was given. The egg was deposited on Vasey's Adelia (*Adelia vaseyi*). The caterpillar emerged a day or two after I received the egg.

The recently-emerged caterpillar began to build a frass chain (a behavior also observed in Leafwing caterpillars). In addition, it also decorated itself with frass. Presumably, the decoration served as camouflage for the young caterpillar. It used the chain for four-five days; then, in what I believe is the third instar, it began resting on the leaves or stems of its foodplant. Perhaps the camouflage was no longer necessary because by this time the young caterpillar had grown a pair of intimidating "antlers" on its head, and the body was now covered with branched spines.

From this point on, the caterpillar changed little in appearance. It pupated 13 days after eclosing, and the adult emerged seven days later. I'm fairly certain that this particular adult was still hanging around the house at least two weeks after being released.

13-VIII-2011



14-VIII-2011

Caterpillar has built frass chain and also decorated itself with frass, 15-VIII-2011

Caterpillar has grown but is still on frass chain, 17-VIII-2011

"Antlers" form in new instar; caterpillar no longer using frass chain, 19-VIII-2011

22-VIII-2011

Face of Mexican Bluewing caterpillar, 23-VIII-2011

[Note: Caterpillars were all raised at Mr. Nall's home in Falcon Heights, Texas.]

Fully grown caterpillar, 26-VIII-2011

Chrysalis, 28-VIII-2011

Pre-emergent chrysalis, 2-IX-2011

Fresh adult female Mexican Bluewing, dorsal, 2-IX-2011

Fresh adult female Mexican Bluewing after release, ventral, 2-IX-2011

The SL Society and the Editor thank Mr. Berry Nall for allowing us to reprint his life history of the Mexican Bluewing (*Myscelia ethusa*) in the SLS NEWS. The original publication on the internet is listed: http://leps.thenalls.net/content2.php?ref= Species/Biblidinae/ethusa/life/ethusa_life.htm

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

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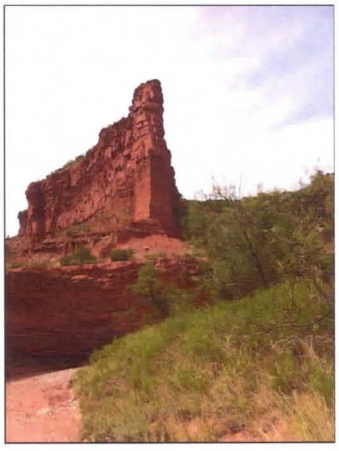

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One of the many formations in Caprock Canyons State Park (near Quitaque, Texas; August 2015).

And one of the approximately 140 bison in the Park said to be descendants of the Southern Plains Bison that the West Texas rancher Charles Goodnight preserved in 1878. (Some historians interpret this statement slightly different.) It has been documented that these bison contain no DNA from cattle. The bison roam free in the Park and showed up at our cabin late at night (*ergo* the poor quality photo, The Editor) .

NATURAL HISTORY NOTES ON GIANT SILKWORMS (SATURNIIDAE) OF THE CATSKILL MOUNTAINS, NEW YORK

BY

ROBERT DIRIG

ALTHOUGH MOST SATURNIID MOTHS ARE FAMILIAR AND EASY TO IDENTIFY (Ferguson, 1971-1972; Tuskes *et al.*, 1996; Beadle & Leckie, 2012), their local natural histories remain largely unrecorded. In a recent essay on decline of saturniids and sphinx moths (Sphingidae) in the northeastern United States, Wagner (2012) called for more regional information, as an aid to understanding their disappearance. This paper answers his request by synthesizing original observations from 1963-2015 with information from earlier publications (Cleveland, 1896; Forbes, 1923, 1928; Dirig 1967a-b, 1972, 1973, 1974, 1975a-c, 1992, 1994), thus providing a thorough baseline of flight dates, life histories, and status observations for ten Giant Silkworms of the Catskill Mountains, N.Y.

REGION AND STUDY SITE

THE CATSKILL MOUNTAINS are the dissected remnants of an ancient Devonian plateau of porous grey sandstone (the famous quarried "bluestone" of the region), lying between the Hudson, Delaware, and Susquehanna Rivers in southeastern New York (shaded grey in Figs. 1-A & 5; Titus & Titus, 2015). The dark red line in Fig. 1-B surrounds the Catskill Plateau, as defined by Fenneman (1938), and adapted by Brooks (1979:1-3) in his *Catskill Flora and Economic Botany*. **My study area**, shaded grey in southeastern Delaware and northwestern Sullivan Cos. (Fig. 1-B), stretched from the villages of East Branch and Fishs Eddy on the East (Pepacton) Branch, to Hancock, Lordville, Long Eddy, and Callicoon along the main corridor of the Delaware River. It encompassed the hamlets of Bouchouxville, Pea Brook, Goulds, and Rock Valley, with the locus of my observations at **French Woods** (the red dot labeled *F.W.*).

HABITATS & WOODY FLORA: The 200-acre tract surrounding our F.W. house included south-sloping lawns, old fields, two heritage apple orchards, thin woodlots, farm ponds, numerous springs and seeps, fallow pastures and hayfields, and an essentially pristine, boreal, 26-acre swamp. The property was developed from wilderness in the mid-1800s, and continued as an intermittently active agricultural landscape until the 1980s. A 385-acre New York State Forest Preserve abuts the property, with many old-growth trees, and a steep talus slope of boulders and outcropping sandstone bedrock. ***Elevations*** range from 1700–2100 ft., with a USGS benchmark on our lawn at 1836 ft.

The lot surrounding the house where my UV light was situated had many trees, shrubs, and woody vines that might serve as larval foodplants for moths (* = a naturalized non-native species, † = a cultivated plant): White Ash (*Fraxinus americana*), Sugar Maple (*Acer saccharum*), Red Maple (*A. rubrum*), *†Apple (*Malus pumila*), Trembling Aspen (*Populus tremuloides*), Black Cherry (*Prunus serotina*), Choke Cherry (*P. virginiana*), Pin Cherry (*P. pensylvanica*), Hawthorns (*Crataegus* spp.), Shadbush (*Amelanchier* sp.), Bitternut Hickory (*Carya cordiformis*), Staghorn Sumac (*Rhus typhina*), Frost Grape (*Vitis riparia*), Common Elderberry (*Sambucus nigra* ssp. *canadensis*), Red-berried Elder (*S. racemosa*), †Purple Lilac (*Syringa vulgaris*), and †Blue Spruce (*Picea pungens*). **Adjacent woodlands and old fields** contained White Birch (*Betula papyrifera*), Grey Birch (*B. populifolia*), Black Birch (*B. lenta*), Yellow Birch (*B. alleghaniensis*), American Elm (*Ulmus americana*), Water Beech (*Carpinus caroliniana*), Hop Hornbeam (*Ostrya virginiana*), American Beech (*Fagus grandifolia*), willows (*Salix* spp.), *†Mountain Ash (*Sorbus* sp.), American Basswood (*Tilia americana*), Tuliptree (*Liriodendron tulipifera*), Sassafras (*Sassafras albidum*), Hemlock (*Tsuga canadensis*), Common Juniper (*Juniperus communis*), Striped Maple (*Acer pensylvanica*), Witch Hazel (*Hamamelis virginiana*), Highbush Blueberry (*Vaccinium corymbosum*), Lowbush Blueberry (*V. angustifolium*), Maple-leaved Viburnum (*Viburnum acerifolium*), Spiny Gooseberry (*Ribes cynosbati*), Blackberry (*Rubus alleghaniensis*), Red Raspberry (*R. strigosus*), Purple-flowered Raspberry (*R. odoratus*), Northern Meadowsweet (*Spiraea alba* var. *latifolia*), Pink Azalea (*Rhododendron periclymenoides*), Pagoda Dogwood (*Cornus alternifolia*), American Bittersweet (*Celastrus scandens*), *Eglantine Rose (*Rosa eglanterina*), *Japanese Barberry (*Berberis thunbergii*), *†Black Locust (*Robinia pseudo-acacia*), and Butternut (*Juglans cinerea*). **A large boreal swamp** within 1400 ft. of the yard additionally supported Black Ash (*Fraxinus nigra*), Mountain Maple (*Acer spicatum*), Spicebush (*Lindera benzoin*), Poison Ivy (*Toxicodendron radicans*), Great Laurel (*Rhododendron maximum*), Mountain Laurel (*Kalmia latifolia*), Hemlock (*Tsuga canadensis*), White Pine (*Pinus strobus*), American Yew (*Taxus canadensis*),

Leatherwood (*Dirca palustris*), Mountain Holly (*Ilex montana*), Winterberry (*I. verticillata*), Speckled Alder (*Alnus incana rugosa*), and Beaked Hazelnut (*Corylus cornuta*).

METHODS

I obtained an entomological **"blacklight"** (UV) on 7 Aug. 1965, and ran it nightly at F.W. (Figs. 2-4; setup as described in Dirig, 1975a:7-9) for the rest of that season; and from dusk to dawn between April and October through 1968, and less regularly (usually on weekends) until the mid-l980s, recording all Saturniidae that were attracted. I checked the light occasionally in the evening (Fig. 2), then between 1:00 and 2:00 a.m., and again at dawn. The light was not portable, thus used in the yard only. My cousin Andrea Barron also ran a UV light in 1967-1968, in her yard in the midst of old fields and woodlands at F.W., half a mile from our house, and shared her specimen data and larvae with me. **Adult moths** sometimes also came to incandescent porch lights and lighted windows, or were rarely encountered by chance in the wild during their daytime repose. Finding **wild cocoons** was another source of records from throughout the region, Cecropias being most frequently encountered (Figs. 27, 29-30), Prometheas much less often (Fig. 22-24), and Polyphemus only twice (Figs. 14-15). **Wild larvae** of Polyphemus (Fig. 13), Cecropia (Fig. 26), Pink-striped Oakworm, Io, and the Rosy Maple Moth (Fig. 10) were also rarely found. When available, **newly emerged ♀ moths were tethered** inside screen cylinders (Dirig, 1975a:25-27) to lure ♂♂ — the most efficient way of ascertaining presence of a species in a particular area. From 1965-1974, I occasionally made detailed **drawings** of larvae, pupae, and adults in resting attitudes, as an additional method of observation (Figs. 6, 11-12, 17, & 25).

I have included important records from other Catskill-area lepidopterists, among them the late **MAX RICHTER**, a well-known "*Catskill Butterfly Farmer*" from East Durham, Greene Co., on the northeastern corner of the region (yellow dot labeled ***M.R.*** in Fig. 1-B, and largest yellow dot in Fig. 5; Richter, 1970s; Weiner, 1971, 1973-1974; Kruppenbacher, 1985). The **SEELEY FAMILY** of Oneonta, Otsego Co., N.Y., in the Susquehanna River valley on the northern edge of the Catskills (orange dot labeled ***O*** in Fig. 1-B), was very active with Lepidoptera in the 1960s-1970s (C. Seeley, 1963; Dirig & Johnson, 1971; M. Seeley, 1994:80-87). A few records from **JAMES CANE** (Dirig, 1974), **RONNIE MILLER** (Dirig, 1975b; the green dot labeled ***B.C.*** in Fig. 1-B is Bramley Mountain Rd. near Bovina Center, Delaware Co., the site of his saturniid sightings at a mercury vapor security light), and F.W. family members and neighbors (see ACKNOWLEDGEMENTS) are also included.

Most collecting and rearing experiences reported in *Growing Moths* (Dirig, 1975a) happened at F.W. and in surrounding hamlets and villages. Moth specimens were collected, reared, and prepared as described in Dirig (1975a, 1977). My Lepidoptera collection will be deposited in the Cornell University Insect Collection (CUIC), and my pressed vouchers of larval foodplants and caterpillar feeding signs will be donated to the Bailey Hortorium Herbarium, also at Cornell.

ADDITIONAL ABBREVIATIONS AND CONVENTIONS: **Co.** = County; **UV** = attracted to ultraviolet light; ♂ = male; ♀ = female. Larval growth is indicated as **1-I** for the first instar, **2-I** for the second instar, etc. Clock hours and minutes are in **Eastern Daylight Savings Time**. **Moth names** follow the *Peterson Field Guide to Moths of Northeastern North America* (Beadle & Leckie, 2012). Four-digit "**Hodges numbers**" following scientific names for moth species are from Hodges *et al.*'s (1983) *Check List of the Lepidoptera of America North of Mexico*. **Plant names** are from the online *New York Flora Atlas*: [*http://newyork.plantatlas.usf.edu/Browse.aspx?cat=Scientific+Name*].

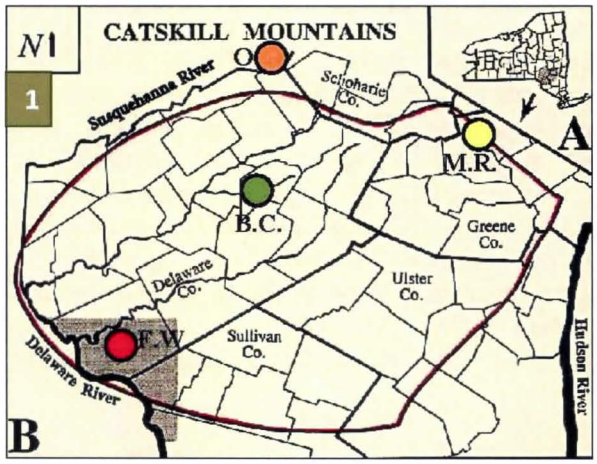
SPECIES LIST

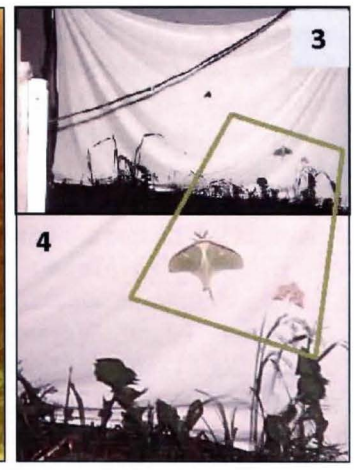
Royal Silkworm Moths
Subfamily Ceratocampinae

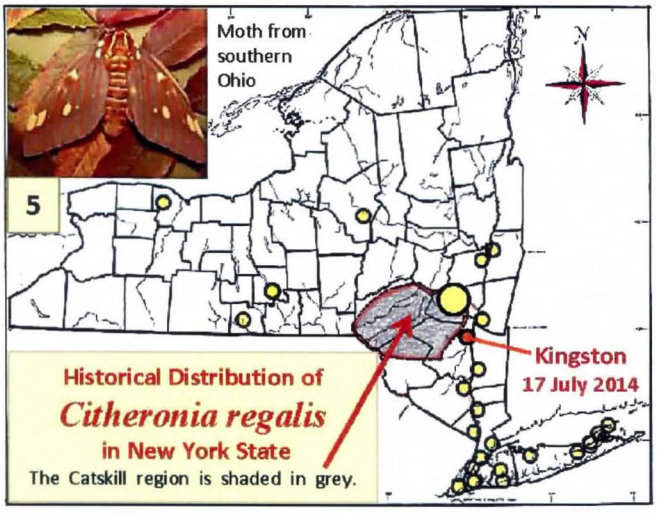
Eacles imperialis (Drury) 7704
(Imperial Moth)

Max Richter (*verbal com.*, 1967, 1971-1972; Dirig, 1967b) occasionally lured wild ♂ Imperials to "calling" reared ♀♀, and more recently to UV, in late July at his Butterfly Farm in ***East Durham, Greene Co.*** (Fig. 1-B), between 1932 and 1968, especially in the early years. He also found wild Imperial larvae on Eastern White Pine (*Pinus strobus*) at his Farm (*letter*, 23 July 1973), and there was a very large Imperial pupa labeled "East Durham" in his display collection at the Butterfly Farm, probably metamorphosed from a wild larva.

This large yellow moth was so widespread in New York in the Victorian era and early 1900s that Forbes (1928) did not specify localities, but it disappeared in the 1960s. **Imperials have recently been seen** at several places in the state (1985-2015): **ADIRONDACK REGION** (ssp. *pini* Michener): ***Black Lake*** (near Hammond), ***Jefferson Co.***, large ♀ (C. Fishel, 6 July, mid-1980s, in collection of A. Kawahara); 3 collected

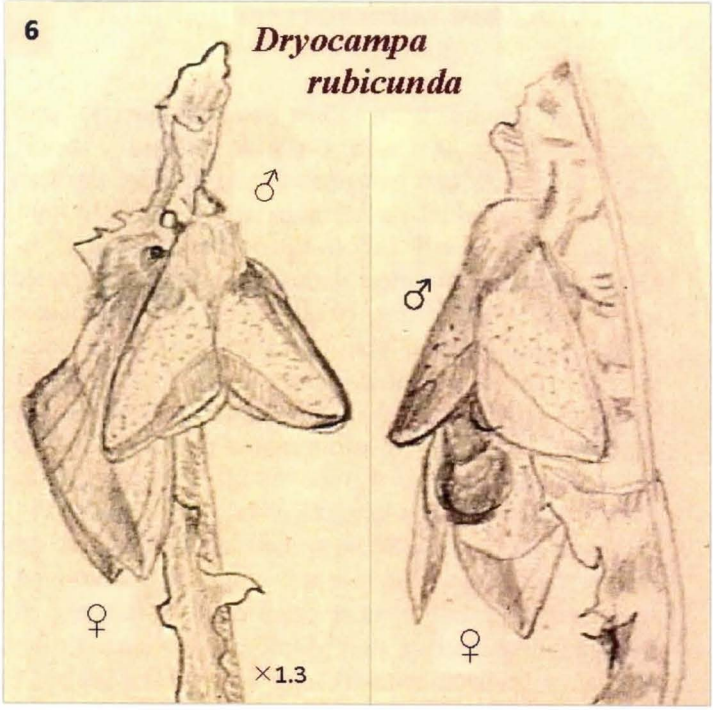


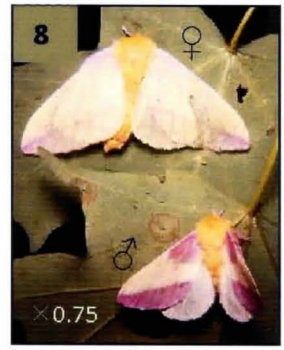




CATSKILL SATURNIIDS I

(1) The Catskill Plateau from Fenneman (1938) and Brooks (1979); shaded **study area** in **B** with ***red dot*** at French Woods (F.W.); the ***yellow dot*** is Max Richter's Butterfly Farm (M.R.); the ***orange dot*** is Oneonta (O); the ***green dot*** is Bovina Center (B.C.). (2-4) **Blacklight:** Author (in Aug. 1967), and sheet with *Actias luna* and *Amorpha juglandis* at F.W. (15 June 1968). (5) ***Citheronia regalis*:** Historical records in N.Y., showing Richter's Farm (largest yellow dot) at the northeastern edge of the Catskills. ***Dryocampa rubicunda*** (all F.W.): (6) pair sketched at 5:30 a.m., 8 June 1974; (7) the same male; and (8) separated pair, showing contrasts in coloring and size; (9) eggs laid in captivity, 8 Aug. 1972; (10) wild larva descending an *Acer saccharum* trunk to pupate, 12 Aug. 1973; ink sketches of (11) a 5-I larva, 26 Aug. 1965, and (12) a pupa, 4 Sept. 1965.





in ***Jefferson Co.***, 1990, by T. L. McCabe (Schweitzer *et al.*, 2011:277); a fresh ♀ near ***Degrasse, St. Lawrence Co.***, plus 5 adults at mercury vapor light in ***Edwards, St. Lawrence Co.***, on 12 July 2014 (S. Daniel, *email* to *nyleps*, and photos), and 3 ♂♂ at Edwards on 20 & 24-25 July 2015 (S. Daniel & R. Dirig); a pre-pupal brown larva crawling on the ground at ***Plattsburgh, Clinton Co.*** (W. & B. Connor, 22 Sept. 2002, *photos*); additional recent adult records from ***Clinton, Washington, and Warren Counties, N.Y.*** (Schweitzer *et al.*, 2011:277-278) and nearby South Hero Island, Vermont, in Lake Champlain (Hedbor, 2006); and a ♀ at a lighted window, ***Essex, Essex Co.***, in summer 2010 (T. Duca, *email & photo*). [Forbes 1928:586 also reported a historical locality at ***Peru, Clinton County***.] **FINGER LAKES REGION** [all probably ssp. *imperialis*, as a fresh ♂ collected near Ithaca by J. G. Franclemont on 9 July 1947 was used to illustrate that taxon by Ferguson (1971:Plate 1, Fig. 1)]: ***Ithaca, Tompkins Co.***, 3 ♂♂ in a mercury vapor light trap (Franclemont & D. Rubinoff, July 1990, *verbal comm.*); [historical specimens from ***Ithaca*** in CUIC were collected on 8, 9, 15, 16, 26, & 29 July, and 4 Aug., between 1882-1919]; ***Seneca Falls, Seneca Co.***, perfect ♂, UV (A. Colton, 15 June 1999, in a 4-H collection). **LONG ISLAND, SUFFOLK CO.** (ssp. *imperialis*): ***Napeague*** (H. McGuinness, at UV, 15 July 2010, *email* to *NYSButterflies* of 25 July 2010), with additional current records from ***Shelter Island***. This species seems to be recovering in N.Y. Goldstein (2010) provided a thorough review of its recent distribution, decline, and nutritional ecology in New England. Schweitzer *et al.* (2011:277-279) summarized information on and status of *E. imperialis pini* in northeastern North America.

Cleveland (1896) and Forbes (1923, 1928) did not record Imperials from Oneonta — although there is a ♂ specimen at the N.Y.S. Museum in Albany that was collected on 12 July 1909 at ***Sidney, Delaware Co.***, 18 miles southwest of Oneonta. I tethered unmated reared ♀ Imperials on 3-5 July 1974, 1½ miles south of Hancock, Delaware Co., in the Delaware River valley, where steep, wooded hillsides were covered with White Pine and Red Maple (*Acer rubrum*), favored larval hosts in N.Y. (Forbes, 1928; J. G. Franclemont, *verbal. com.*, 1970s). No ♂♂ came there — or at F.W.

Citheronia regalis (Fabricius) 7706
(Royal Walnut Moth)

Forbes (1928) reported this splendid moth from ***Oak Hill*** in northern ***Greene Co.***, on the northeastern edge of the Catskills. Max Richter (*verbal com.*, 1967, 1971-1972; Dirig, 1967b) told me he had attracted a few wild ♂ *regalis* to unmated reared ♀♀ in late July on his Butterfly Farm at ***East Durham***, ca. 3 miles southeast of Oak Hill, decades before. A drive through this area revealed much hickory (*Carya* spp.), Butternut (*Juglans cinerea*), and Black Walnut (*J. nigra*), which are primary foodplants of its Hickory Horned Devil caterpillars. A **recent** worn ♂ was reported by John F. Cryan (*email*, 22 July 2014) at light at a car dealership in ***Kingston, Ulster Co.***, N.Y. (orange dot in Fig. 5), on ***17 July 2014***, ca. 30 miles south of the Forbes-Richter locality — apparently the ***first sighting of this moth in many years from the mid-Hudson valley!*** (My unmated reared ♀ *regalis* attracted no ♂♂ at F.W. in late June and early July 1975.)

C. regalis reached its northern limit in N.Y., having historically occurred in the lower Hudson River valley and on Long Island, but only spottily elsewhere in warmer lowland areas of the state (Forbes, 1928; Ferguson, 1971:32; Tuskes *et al.*, 1996:60; Fig. 5). It has apparently disappeared from most historical sites in N.Y., but is slowly recovering on **EASTERN LONG ISLAND, SUFFOLK CO.**: T. L. McCabe received a large ♀ pupa from ***Montauk village*** in Aug. 1984 (now in the New York State Museum collection at Albany). H. McGuinness (*emails* to *NYSButterflies*, 22 Sept. 2009 & 24 July 2011) announced 5-I larvae crawling at ***East Hampton & Springs*** on 21-22 Sept. 2009, and adults at ***Montauk*** on 22-23 July 2011; also a recent record from ***Shelter Island***.

Dryocampa rubicunda (Fabricius) 7715
(Rosy Maple Moth)

This pretty moth is the smallest Catskill saturniid, with a wing expanse of 1¼ in. (♂, Figs. 6-8) to 2 in. (♀, Figs. 6, 8). **Adults** were abundant during the two annual flights, which occurred in late May to late June, and again from early July to the end of Aug. (Fig. 31; Dirig, 1975a). My latest date was a worn ♂ attracted to a reared ♀ on 26 Aug. 1972 at F.W. **Pairing** occurs around midnight and possibly lasts through the next day: A pair that mated before 2:00 a.m. was still together at 9:30 a.m., when accidentally disturbed in captivity (Dirig, 1972); and a mated pair was found at UV at 5:30 a.m. on 8 June 1974 (Figs. 6-8). The glossy yellow-orange **eggs** were laid in clusters (Fig. 9), hatching in 10-12 days. **Larval foodplants** are maples (*Acer* spp., Aceraceae), with Sugar Maple (*A. saccharum*) probably most often used in this region. Reared larvae also ate Red Maple (*A. rubrum*), Striped Maple (*A. pensylvanicum*), and Mountain Maple (*A. spicatum*), but two broods refused Box-elder (*A. negundo*). Silver Maple (*A. saccharinum*) also grows regionally in the Delaware River corridor, but I did not have any leaves to try. Young **larvae** were colonial, the larval period lasting 30-35 days, after which

mature caterpillars left the leaves to pupate on the bottom of their rearing enclosure (Fig. 11). I found a wild larva descending to pupate (Fig. 10) and a pupa in leaf litter beneath a Sugar Maple at F.W. The dull black, roughly textured **chrysalis** (Fig. 12) rested for 21 days at midsummer, but overwintered in the second brood.

Anisota virginiensis (Drury) 7723
(Pink-striped Oakworm)

This species was reported by James Cane (*letter*, 11 Aug. 1974, and *email*, 23 Feb. 2015; Dirig, 1974) in "*oak woodlands*" from Deposit to Stockport and Lordville, Delaware Co., in the Delaware River corridor: "*Adults were flying and mating around June 6* [1974, at Lordville], *particularly on sunny warm late morning hours.... Often ten or more males were fluttering around a single female resting on ... low underbrush.*" He found six 2-I larvae on oak (*Quercus* sp.), 2-3 weeks later, at the same place. White Oak (*Q. alba*), Red Oak (*Q. rubra*), and Chestnut Oak (*Q. montana*) are common in this area along the River at elevations of 900-1000 ft., but do not reach the cooler F.W. uplands at elevations nearer 2000 ft., and this moth has not been observed there. [This Oakworm was also found at Oneonta in the Susquehanna River valley by R. Hendrickson Jr. in June 1973.]

Buck Moth and Io group
Subfamily Hemileucinae

Automeris io (Fabricius) 7746
(Io Moth)

One of my earliest encounters with saturniids, at age 6, was with a ♂ Io Moth, which flashed his big "eyespots" in my face when I touched him during his daytime repose on our windowsill.

Ios were common at F.W., the yellow ♂♂ coming to porch and UV lights throughout June (Fig. 31) between 1963-1974, with purplish wild ♀♀ very rarely encountered at the end of that month (two in 40 years — Dirig, 1967a:10, 1992). In 1967, A. Barron found a ♀ at the edge of her lawn at F.W., and reared larvae on †Sour Red Cherry (*Prunus cerasus*) leaves. **Ova** were white with black summits, laid in mats on foodplant leaves, and hatched in ca. 10 days. I found several rafts of 1-I **larvae** in hedges along unpaved country roads — 23 larvae on willow (*Salix* spp.) on 17 July 1966, and 19 larvae on shadbush (*Amelanchier* sp.) on 23-24 July 1967 on Halsey Hill, Rock Valley, on the Delaware/Sullivan Co. line; and ca. 100 larvae, in batches of about 20, on Quaking Aspen (*Populus tremuloides*) and shadbush at F.W., in early July 1967 (with J. M. Dirig); also a 5 - I caterpillar browsed on White Ash (*Fraxinus americana*) and Sheep Sorrel (*Rumex acetosella*) in mid-Aug. 1966 at Walton, Delaware Co. (J. M. Dirig). Reared caterpillars fed for 5-6 weeks, then spun thin cocoons of brown silk among leaves. The matte black **pupae** passed the winter, producing a new generation of moths the following June. On 1 & 3 June 1974, the same reared ♂ mated with different reared ♀♀ before 10:45-11:30 p.m., the pairs separating within 4-6 hours.

Giant Silkworm Moths
Subfamily Saturniinae

Antheraea polyphemus (Cramer) 7757
(Polyphemus Moth)

Polyphemus was the most abundant large saturniid, with as many as 30 ♂♂ lured to ♀♀ and UV in one night, from the first hot days of late May through mid-July at F.W. (Fig. 31; Dirig, 1967a:10, 1975a:24, 1992). I wonder if there was a bimodal flight in this region, as there seemed to be a single brood with two peaks (Fig. 31)? R. Miller reported a late adult date of 10 Aug. 1974 at B.C. (Dirig, 1975b).

Wild **adults** were rarely encountered outdoors in daylight at F.W.: A. Barron & R. J. Barron found a **mated pair** in a meadow on 4 July 1966. And a recently emerged wild ♀, fully expanded but still teneral, and bright yellow-orange in color, flashed her wing dorsals in my face along a country road at 7:30 a.m. on 3 July 1967 — illustrating very well her exquisite ventral camouflage, and startle response when alarmed. One perfectly developed ♂ that came to UV on 7 June 1968 had a wingspan of only 3 inches (in set position), as opposed to 5 inches in the largest ♂♂ from this region. Other ♂♂ that came to calling ♀♀ and UV the same night revealed a wide variation in dorsal wing color — some straw-yellow, others rusty-red, tan, or greyish. This is normal in Polyphemus populations, according to Ferguson (1971-1972:200) and Tuskes *et al.* (1996:178).

Polyphemus' **eggs** looked like small beige pills with a brown rim, and were laid in rows and patches. They hatched in 7 days. Larvae reared indoors fed for 48-50 days. I recorded two 5-I **wild larvae** crawling beneath Sugar Maples, seeking a pupation site: one found by A. Barron at F.W. in Sept. 1967 (Fig. 13), the other by me under a colonnade of these large maples edging South St. at the Walton Cemetery, Delaware Co., in Sept. 1995. This implies that they usually descend to pupate. Although the ***presence of oaks*** (*Quercus* spp.) has been experimentally proved to be necessary for pheromone release in some areas (Tuskes *et al.*, 1996:178), these trees do not grow at F.W., the closest

being 3-5 miles to the south. Reared ♀ Polyphemus have readily "called" and mated at F.W., suggesting that this finding might apply to regional Polyphemus populations in areas abounding with oaks. Sugar Maple is the likely natural host at upland sites, and sleeved larvae grew very well on it.

A **cocoon** found at Rock Valley in Feb. 1968 (J. F. Dirig) was suspended in leaves over a Red Raspberry (*Rubus idaeus*, ssp. *strigosus*) cane (Fig. 14); this produced a ♀ on 9 June 1968. An undersized wild cocoon from F.W. (Fig. 15) yielded a single large ichneumonid, the **pupal parasitoid** *Enicospilus americanus*. Larvae sleeved on Sugar Maples produced tachinid **larval parasitoids** in 1969 and 1974 at F.W., those from 1969 determinable only to family, due to mold (R. Peigler, *letter*, 25 Feb. 1994; J. J. Dombroskie, *verbal comm.*, 10 Aug. 2015), the 1974 fly identified as *Compsilura* cf. *concinnata* (by Dombroskie, CUIC, 10 Aug. 2015). Peigler (1994:73-74) also reported this from Polyphemus, and Wagner (2012:53) provided an excellent image of the fly.

The most remarkable saturniid individual I ever encountered was a **gynandromorph** of this species that emerged on 5 June 1969 from a cocoon reared from eggs laid at Livingston Manor, Sullivan Co., by a wild ♀ in summer 1968 (Fig. 16, in my collection; Dirig, 1975a:36, 1994). It is small (set wingspan 3½ in.). Other Polyphemus gynandromorphs have been reported from California (Smith, 1998) and Kentucky (Marcus, 2006).

Actias luna (L.) 7758
(Luna Moth)

Two magnificent Lunas introduced me to the Saturniidae (and Lepidoptera) at age five! My maternal grandmother showed me one resting in the daytime on a tomato plant in her garden [Halsey Hill, Rock Valley, with nearby Butternut and Bitternut Hickory (*Carya cordiformis*) trees]; and my father's mother found one settled in the lane between our houses (F.W.), took it home, and placed it on a curtain in her dining room, where we all admired its beauty. The large size, bright green color, and exquisite wing shape of these moths made an impression I never forgot. It was thirteen years before I saw another — at my UV light on 9 June 1967.

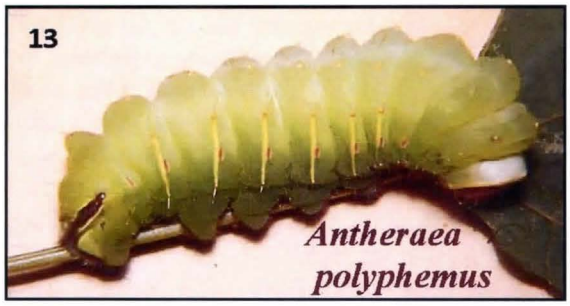
The single brood flew mainly in June at F.W., with two stragglers in the first week of July 1974 (Fig. 31). Max Richter caught intensely green ♂♂ on 8 & 11-12 May 1973, after a nearly snowless winter, the earliest wild adults he had seen in 50 years' experience (Dirig, 1973; Fig. 31). Only ♂♂ came to my UV light (Figs. 3-4, 17-18), with recorded appearance times of seven specimens from 10:30 p.m. to 12:30 a.m., and 5:00 to 6:00 a.m. I found a dead, old ♀ lying on the ground at the edge of a Bitternut Hickory grove, a few hundred feet from my UV light, on 25 June 1971. The only other ♀ we saw was a perfect one killed by a car on the highway that passed our house, on 16 June 2004 (J. F. Dirig). On 23 June 1968, a perfect ♂ at UV had very long tails that were twisted for a third and half their lengths to reveal the underside (Fig. 18, *arrows*), in contrast to the usual slight curl at the ends, as drawn in Fig. 17. A recent Luna record for F.W. was a fresh ♂ at a porch light, 700 ft. SW of our yard (L. Ogozalek, 6 June 2014, *photo*). R. Miller found Lunas at UV, flying midnight to 4:00 a.m., in B.C., from late May to 20 June 1974 (Dirig, 1975b:24).

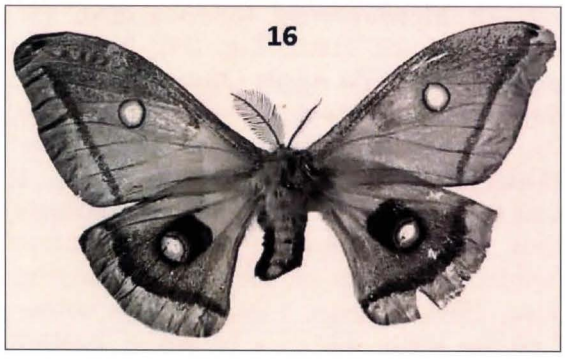
Lunas were less common than Polyphemus and Cecropia, perhaps due to limited potential **foodplants** in the F.W. uplands — occasional Bitternut Hickories and a single Butternut. In oak-hickory woodlands along the Delaware River, where they were more abundant, Lunas may have used Shagbark Hickory (*Carya ovata*), perhaps other hickories, and Black Walnut. [Birches (*Betula* spp.) and other trees are also possible foodplants in the uplands.]

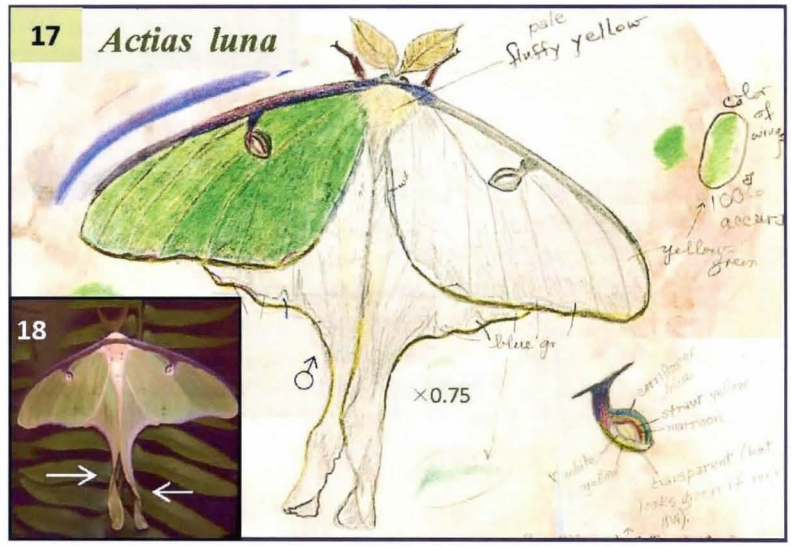
Callosamia promethea (Drury) 7764
(Promethea Moth, Spicebush Silkmoth)

Because Promethea ♂♂ do not fly to UV lights at night, I was unsure of their presence at F.W. until a newly emerged ♀ lured a wild ♂ at 6:30 p.m. on 17 June 1966. A good sample of ♂♂ flew to several reared ♀♀ on 7-10, 15, and 18-19 June 1982 at F.W. (Figs. 19-21, 31). Recorded arrival times for 27 ♂♂ started at 4:05 and ended at 6:55 p.m (one each in 1966 & 1971, the rest in 1982). A few had bold white discal markings on the ventral side (Fig. 19), where those of the majority were very small; another from 1971 additionally showed uncommon pale discal spots on the dorsal forewings (Fig. 20). Note bird beak damage on the wings of two other ♂♂ from the 1982 series (Fig. 21); diurnal activity may subject them to bird predation more often than the nocturnal species, which are cryptic and rest quietly during the day.

All the ♂♂ I attracted flew in from the south, so I looked for years for **cocoons** along the Delaware River, where Sassafras (*Sassafras albidum*) grew in large clumps. It took 23 years to find them on this shrub there, near Callicoon, Sullivan Co. (Fig. 22); and others in Sassafras thickets bordering Rt. 97 on Doyle's Hill and near Somerset Lake (Fig. 23) between Hancock and F.W. Another cocoon found 3 July 1994 on Jensen Hill near Long Eddy was attached to Witch Hazel (*Hamamelis virginiana*) in a swamp, with much nearby Sassafras and Spicebush (*Lindera*

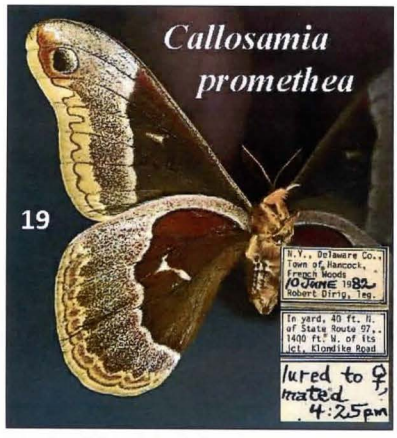


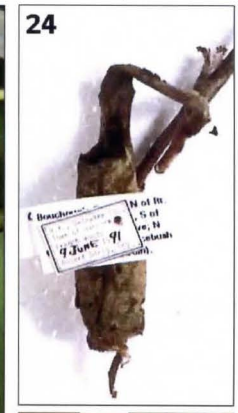


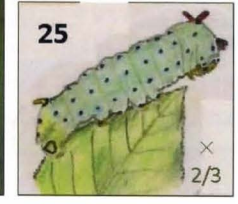


CATSKILL SATURNIIDS II

***Antheraea polyphemus*: (13)** 5-I larva crawling to pupate, Sept. 1967, F.W. **(14)** Wild cocoon suspended among *Rubus idaeus* leaves, Rock Valley, Feb. 1968. **(15)** Undersized wild cocoon, spun on the ground among *Osmunda cinnamomea* in a swamp, 11 Nov. 2001, F.W.; it produced an *Enicospilus americanus* parasitoid, June 2002. **(16)** Reared gynandromorph from Livingston Manor, Sullivan Co., emerged 5 June 1969. ***Actias luna*: (17)** Colored sketch of ♂ at UV, 1 June 1974, F.W. **(18)** A ♂ with oddly twisted tails (*arrows*) at UV, 23 June 1968, F.W. ***Callosamia promethea*: (19)** A ♂ with bold discal markings on venter, 10 June 1982, F.W. **(20)** Wild ♂ with unusual pale spot (*circled*) in dorsal forewing cell, 18 June 1971, F.W. **(21)** Bird-beaked males that came to females, 8 June 1982, F.W. Wild cocoons on *Sassafras albidum* near Delaware River: **(22)** Callicoon, Sullivan Co., 10 June 1989; **(23)** Somerset Lake, Delaware Co., 9 June 1997. **(24)** Small wild cocoon on *Lindera benzoin*, 9 June 1991, F.W. **(25)** Small reared 5-I larva from Oneonta, Otsego Co., 47 days old, drawn 28 Sept. 1965.







benzoin). I found a small cocoon on Spicebush in an upland swamp at F.W. in 1991 (Fig. 24), and three others on Mountain Holly (*Ilex montana*) in the same wetland in 2002 (Richard Peigler believes *Ilex* to be a ***new host record*** — *email*, 28 June 2015). Keeping wild cocoons as labeled specimens preserves information on likely foodplants (Figs. 22 & 24). A colored drawing of a small 5-I **larva** from Oneonta, which was reared on Choke Cherry (*Prunus virginiana*) in 1965, shows the characteristic green body color with red and yellow knobs (Fig. 25). Prometheas apparently have one June flight in this area (Fig. 31). I never had any reared ♀♀ available in early August to test for ♂ presence in a summer brood.

Callosamia angulifera (Walker) 7765
(Tuliptree Silkmoth)

On 23 June 1979, Colleen Connolly (Anon., 2012) found a perfect ♂ clinging to a screen door under a light in the daytime, on Baudendistel Rd. in F.W. (in her collection, the specimen unfortunately now lost). This area is ca. 1 mile from the Delaware River's East Branch, and Tuliptree (*Liriodendron tulipifera*), the presumed larval host, occurred nearby. Large Tuliptrees grow commonly on south- and southwest-facing slopes along the Delaware River in this region at elevations of 900-1000 ft., and *angulifera* must be more frequent than this single record indicates. I have never taken it at UV, despite localized Tuliptree groves in F.W., at ca. 2000 ft. elev. Connolly's spring brood specimen is apparently ***the first Catskill report*** of this species (Dirig, 1992). Field efforts with a portable UV light along the River might disclose further June records; a summer brood in late July-Aug. is also possible. ***Additional nearby records:*** Cornwall-on-Hudson, 4 July 1973, and Mountainville, 1 Aug. 1974, both near Newburgh, Orange Co., N.Y., southeast of the Catskills, at lights (J. A. Serrao, *leg.*; Dirig, 1975b:25).

Hyalophora cecropia (L.) 7767
(Cecropia Moth)

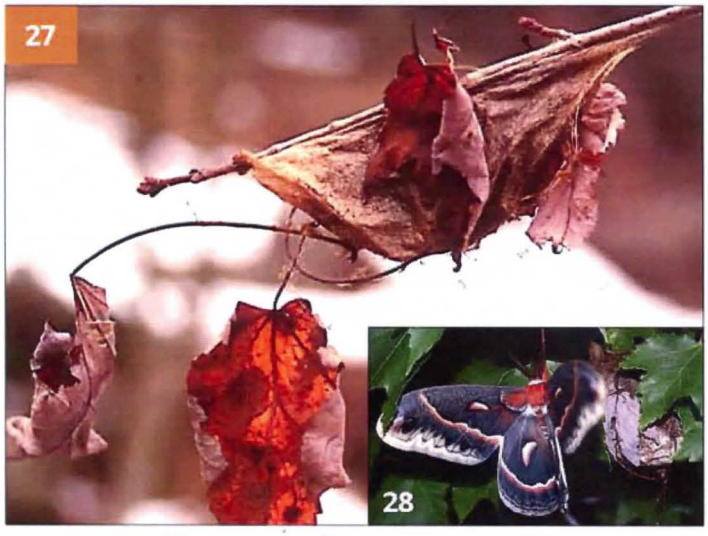
This is the largest Catskill saturniid (Bouton, 1997). **Adults** frequently came to UV lights; the first wild ones I saw were at my blacklight, in June 1966. These beautiful moths expanded 4½-5½ inches (♂♂) and 5¼-6 inches (♀♀), in set-specimen position. They flew throughout June, with a few early records from late May, and one for early July (Fig. 31). I have not noticed the bimodal emergence at F.W. that has been reported by others for Cecropia (Ferguson, 1971-1972:250; Tuskes *et al.*, 1996:202). There is one annual brood.

The ivory **eggs** were coated with burgundy cement, and laid in small clusters on foodplant leaves, hatching in 10-15 days. Reared **larvae** fed for ca. 60 days on leaves of several trees, wild ones seeming especially to like Rosaceae and Betulaceae in this region (see next paragraph). I found a 5-I larva on willow (*Salix* sp.) on 20 Aug. 2000 (Fig. 26); another 5-I caterpillar was discovered on Common Elderberry (*Sambucus nigra*, spp. *canadensis*) in Pea Brook. Fully grown wild larvae pupated in Aug. or Sept.

Cecropia's large reddish-brown **cocoons**, which are usually spun on twigs of the larval foodplant, were conspicuous after autumn leaf-fall along utility lanes and on edges of forest-fringed roadways (Figs. 27, 29-30). I recorded cocoons on the following woody plants, all ***apparent larval hosts***, in Delaware and Sullivan Cos. between 1963 and 2012, most before 1994 [with number of records in square brackets]: shrubby **willow** (*Salix* sp.) [1]; **Black Birch** (*Betula lenta*) [1]; **Hop Hornbeam** (*Ostrya virginiana*) [3]; **American Beech** (*Fagus grandifolia*) [4]; **Choke Cherry** (*Prunus virginiana*) [1 — Dirig, 1975a:24, 1975c:cover I]; **Meadowsweet** (*Spiraea alba*, var. *latifolia*) [5 — *BAGGY FORM*, Fig. 29]; **hawthorn** (*Crataegus* sp.) [3]; ***Wild Apple** (*Malus pumila*) [8]; **Sugar Maple** [3]; **Red Maple** [2 — *SLENDER FORM*, Fig. 27]; **Lowbush Blueberry** (*Vaccinium angustifolium*) [2]; and **Common Elderberry** [2]. It is important to label and save wild-collected cocoons of saturniids, which are not often preserved, but may provide important insights on local hostplants (Fig. 30). In Dec. 1967, I found a large, baggy cocoon sheltered on the lower side of a branch of **Eastern Hemlock** (*Tsuga canadensis*) that was intergrown with a small American Beech; I doubt that the caterpillar ate the Hemlock, as feeding on Pinaceae would be unusual for Cecropia. This cocoon produced a large ♀ on 6 June 1968. [Two other cocoons were sheltered beneath Hemlock branches in the Finger Lakes Region of central New York (Dirig, 2015).]

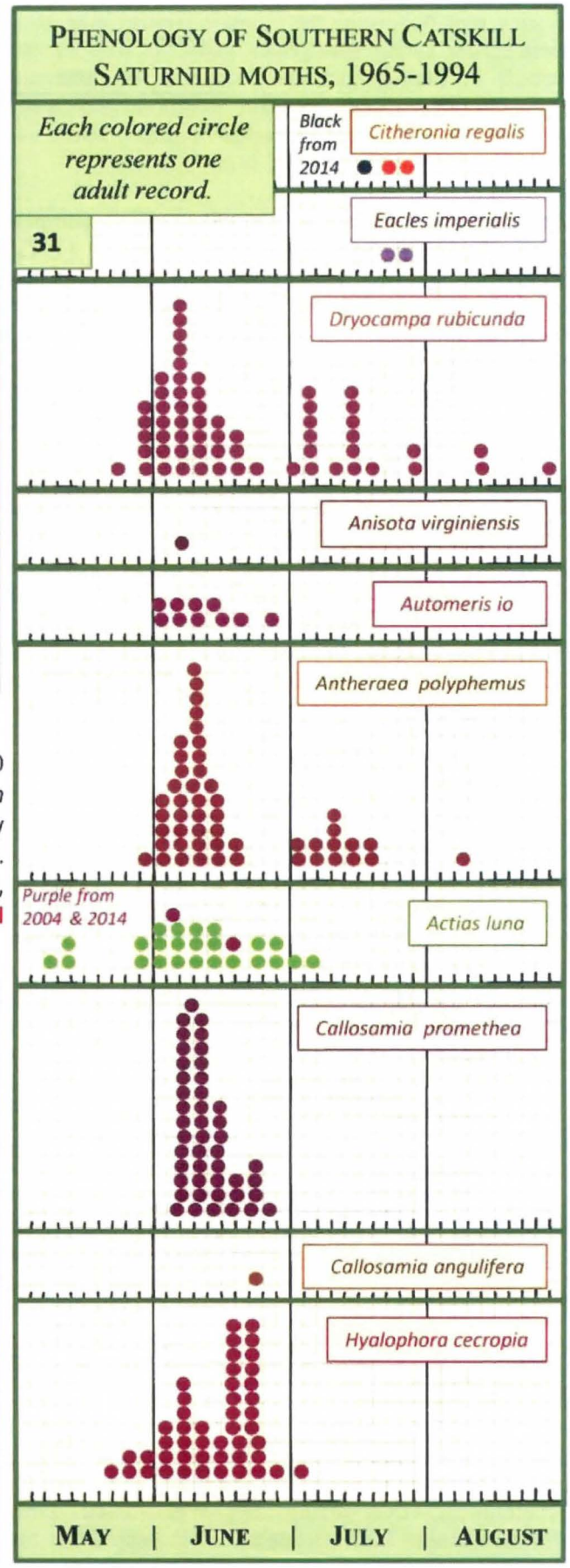
DISCUSSION AND SUMMARY

FLIGHT SEASONS: Fig. 31 provides an historical baseline of annual flight dates of southern Catskill saturniids between 1965 and 1994, with months on the bottom, and each colored dot representing one adult record within a three-day span (four days in the column at the end of months with 31 days). The main flights of all species (except Royal Walnut and Imperial) synchronized in June, with earliest adults appearing on the first very hot days (80°-90°F.). There was one annual brood, except for the Rosy Maple Moth, which had two flights in May-June and July-Aug. Imperial and Royal Walnut Moths flew in mid- to late July in Greene Co.; my unmated ♀♀ of these species that called in late June and the first few days of July may have been too early to attract wild ♂♂ that



CATSKILL SATURNIIDS III

***Hyalophora cecropia*:** (**26**) Wild 5-I larva on *Salix* sp., 20 Aug. 2000, F.W. (**27-28**) Slender cocoon on *Acer rubrum* (with emerged ♂ moth, 11 June 1997) and (**29**) baggy cocoon on *Spiraea alba*, var. *latifolia*, both found 26 Dec. 1996, F.W. (**30**) Wild cocoons labeled with locations, dates, and plant substrates to document likely foodplants. **Catskill Flight Seasons:** (**31**) for all species in this region.



flew later in the month — but one must take advantage of such rare opportunities. Climate change may soon elicit earlier spring emergence dates, as well as two broods, in Pink-striped Oakworm, Io, Polyphemus, Luna, Promethea, and Tuliptree Silkmoth (which are all bivoltine or multi-brooded farther south — Ferguson, 1971-1972; Tuskes *et al.*, 1996).

CONSERVATION CONTEXT: Awareness of saturniid decline has come gradually. ***J. B. Duncan*** (1971) noticed the growing scarcity of the Tamarack (*Larix laricina*)-feeding Columbia Silkmoth (*Hyalophora columbia columbia*) in Michigan, Wisconsin, and Ontario, and advocated restoring populations by setting out eggs in areas with proper habitat. ***Ray W. Bracher*** (1976) reported the disappearance of Promethea, Tuliptree Silkmoth, and three swallowtails (Papilionidae), due to habitat destruction in Indiana and Ohio. ***Sidney A. Hessel*** (1976) suggested that in the Northeast, human influences (habitat destruction, pesticides and herbicides, street lights, and vehicular traffic, among others) had contributed to a "*catastrophic depletion of saturniids to the point of no captures of some species over the past dozen years in places which still appear to provide vast amounts of suitable habitats.*" ***Dale F. Schweitzer*** (1988) reviewed the status of saturniids in the Northeast, observing that populations of all giant silkworms and *Sphinx* spp. (Sphingidae) crashed in the 1950s and early 1960s in Conn., eastern Mass., southeastern N.H., northern N.J., and on Long Island, N.Y., following widespread spraying of DDT for Gypsy Moth (*Lymantria dispar*, Erebidae, Lymantriinae) control. ***George H. Boettner et al.*** (2000) described how *Compsilura concinnata* (Diptera, Tachinidae), a European parasitoid, had been repeatedly released in the U.S. from 1906-1986 to control Gypsy Moths and other lepidopterous pests. This fly's first brood larvae effectively target Gypsy Moth caterpillars in spring, but its two to four succeeding generations attack native Lepidoptera. Boettner's research group demonstrated the high mortality of this parasitoid on young larvae of Cecropia (81%), Promethea (65-70%), and Buck Moth (*Hemileuca maia*, 36%) in Mass., suggesting that "*reported declines of silk moth populations in New England may be caused by the importation and introduction of* C. concinnata." ***Dale F. Schweitzer et al.*** (2011:23-49) presented a thoughtful discussion of "*Causes of Decline and Imperilment*" in eastern North American Lepidoptera. And ***David L. Wagner*** (2012) reviewed moth decline in the northeastern United States, presenting a table of fifteen saturniids that may have disappeared due to habitat loss, coastal development, overgrazing by White-tailed Deer, climate change, light proliferation, increased bat and bird predation, and the presence of *C. concinnata*.

I have seen very little parasitism in Catskill saturniid larvae or pupae — only three times in Polyphemus (two broods of sleeved larvae, 1969 and 1974, and a wild cocoon in 2001); once in a wild Promethea cocoon near Callicoon (1989); but never in wild Cecropia cocoons (1963-2012, most found before 1994), or in wild Io larvae (1966-1967). *Compsilura concinnata* was the parasitoid of Polyphemus in 1974.

GYPSY MOTH ARRIVAL AND CONTROL: A record of insecticide spraying and biological control that targeted this introduced moth at and near F.W. from the 1950s to 1974 may provide insights on the recent decline of saturniids: In **1958** or **1959**, my brother Rodney Dirig and I watched a small plane fly over our property, ejecting a white spray of DDT. (We both developed cold-like symptoms afterwards.) DDT was legally banned in 1972 in the U.S. (Schweitzer *et al.*, 2011:36). In **May and June 1967**, areas of Delaware, Sullivan, Otsego, and Greene Cos., N.Y., were sprayed with Carbaryl (Sevin) "*at the rate of one pound in one gallon of water per acre of woodland*" (Young 1967), anticipating the arrival of the Gypsy Moth frontier, which had been moving west from the Hudson River valley, and was approaching Delaware Co. Young (1967) continued: "*Actual application of the insecticide will not be made over open lands or water.*" The plane passed north and south of our F.W. property on **20 June 1967**, leaving an area of uncontaminated vegetation around the house. After the spraying, I noticed no ill effects on insect species there, except for a scarcity of Clouded Sulphurs (*Colias philodice*) and Black Swallowtails (*Papilio polyxenes asterius*), which may or may not have been related to this pesticide.

As predicted, the first ♂ Gypsy Moth showed up at UV in F.W. on **25 Aug. 1967**; another on **16 Aug. 1969**; and a pupa found on a Red Maple in our yard produced a ♀ in **Aug. 1970**. By **1973**, the moth was an extremely abundant pest, being of less concern in **1974**, and remaining at lower levels in the interim. They were far more abundant in extensive oak woods along the Delaware River near Deposit, Delaware Co., N.Y.: James Cane (quoted in Dirig, 1974) reported that bacterial sprays (*Bacillus thuringiensis*, or *Bt*) applied to forested areas by helicopter were "*extremely effective in reducing Gypsy Moth ... larval populations. I would guess at least 99 percent mortality,* [while] *unsprayed areas approach*[ed] *100 percent defoliation of the upper story....* Calosoma *beetles ('caterpillar hunters') have* [also] *been helping to control the Gypsy Moth larvae*" (Dirig, 1974; James Cane, *emails*, Feb. 2015). The Gypsy Moth frontier continued to move westward across southern N.Y., where the caterpillars largely defoliated oak woods near the Pennsylvania border in Chemung Co. in **1982-1983**, ca. 70 miles west of F.W. (Dirig & Cope, 2012; Dirig, 2012).

Dryocampa rubicunda, Automeris io, Antheraea polyphemus, Actias luna, Callosamia promethea, and *Hyalophora cecropia* are widespread and common in the Catskills. Detailed summaries of historical and recent N.Y. distributions for *Eacles imperialis* and *Citheronia regalis*, and apparently the first Catskill records of *Anisota virginiensis* and *Callosamia angulifera*, are presented in this paper. *Citheronia regalis* and *Callosamia angulifera* approach their northern limits in this region, where peripherally isolated populations may be especially vulnerable to extirpation, whatever the cause.

Revisiting my saturniid specimens and records, while preparing this report, has brought a realization of the richness, glamour, and gentle charm these wonderful insects have brought to me since early childhood. Giant Silkworms are harmless and lovely — a stained glass window into a dark and silent world we do not see. What velvety nights of magic, those nights I spent with giant moths sweeping the sky around my beacon, while I glimpsed the infinite in quaint designs upon their painted wings.

ACKNOWLEDGEMENTS

Much of the information in this paper was summarized in a talk presented at the New York Natural History Conference III at Albany in April 1994 (Dirig, 1994). My family encouraged my interest in moths, and supported collecting and rearing activities throughout my youth. James Cane, John F. Cryan, J. G. Franclemont, Robert Hendrickson Jr., Rose F. Hendrickson, Ronnie Miller, Max Richter, Colleen Seeley, and Mildred D. Seeley shared information and occasional livestock. Richard C. Peigler and Jason J. Dombroskie determined larval and pupal parasitoids. LaVerne L. Pechuman, E. Richard Hoebeke, James K. Liebherr, and Dombroskie facilitated access to the Cornell University Insect Collection. Marjorie Dirig, J. Francis Dirig, Rodney Dirig, Bette J. Dirig O'Brien, John M. Dirig, Matthew F. Dirig, Andrea Barron, Kristin Barron, Robert J. Barron, Lily Ogozalek, Colleen Connolly, Katie Dirig, Mabelle Maxson, Ellis Maxson, Rebecca Nevin, Ernestine Treyz, Sheila Linkroum, Terry Bouchoux, and Edna Crawson shared Catskill specimens and information. Fig. 2 was taken by Marjorie Dirig, and Fig. 16 by Howard H. Lyon; all other photographs, drawings, and graphics are by the author. Carolyn Klass, Scott LaGreca, Ric Peigler, and Torben Russo read drafts of the manuscript or provided feedback on the plates.

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(Robert Dirig, Plant Pathology Herbarium, 334 Plant Science Bldg.,
Cornell University, Ithaca, NY 14853, USA.
Email: red2@cornell.edu)

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WANTED:

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LIFE HISTORY NOTES ON *CATOCALA MESSALINA* GUENÉE

BY
JEFFREY R. SLOTTEN

Catocala messalina has been recorded from a number of states in the southern half of the United States from the Atlantic Coast in the east through Texas and Kansas in the west. However, it is one of the few species of North American *Catocala* whose life history has not yet been published. Barnes and McDunnough (1918) gave the following account: "*Messalina*, the only species in the group XIV (*Andrewsia* Grote), has usually been placed close to *Catocala amica* on account of the lack of a median dark band on the secondaries; a study of the male claspers, however, shows that its affiliates are rather with the *Catocala illecta* group than with *amica;* the early stages will probably shed light on the correct position." Dave Hawks had previously successfully reared several *C. messalina* larvae on *Quercus* in captivity in California, from a female taken in Hays County, Texas, in 1986 (Larry Gall, pers. comm.), but I am unaware of other rearings of this species. Here I present some notes and photographs of the immature stages of this underwing.

In late May of 2012, I found a single adult female *C. messalina* at a gas station light in Rapides Parish, Louisiana, along highway 49 northwest of the city of Alexandria. The female was rather worn and I placed it in a sandwich bag to try to secure ova. The female laid a single grey egg about 1 mm in circumference in the bag in early June, and I subsequently overwintered the egg in ambient outdoor conditions in Gainesville, Florida. A first instar larva hatched on 12 March 2013, and was offered *Quercus virginiana* (live oak) which it readily accepted. The thinly spun cocoon (typical for *Catocala*) was formed on 1 April 2013, and the adult moth emerged on 23 April 2013. Images of the egg, the larva as an early (probably third) instar, as an ultimate (fifth) instar, and the adult are shown in Figures 1-10.

The morphologies of the egg and young larva are both similar in appearance to those of many other *Catocala* species. The mature larva is greyish tan with fine brownish lines and markings, and is relatively nondescript compared to most North American *Catocala*, lacking dorsal embellishments on both abdominal segments A5 and A8, lacking a lateral "patch" on A5, and lacking lateral filaments around the legs and prolegs. In these aspects the larva of *C. messalina* is most similar to the larvae of the *Amorpha*-feeding *C. abbreviatella, C. nuptialis*, and *C. whitneyi*. However, it is unclear whether *C. messalina* shares these characteristics due to common ancestry, and a more definitive placement of this species awaits the results of ongoing analyses of the immatures, genitalia, and genetics of all members in the genus (Larry Gall, Hugo Kons, and Robert Borth, pers. comm.).

Lastly, I note that *Catocala messalina* is present in oak woodlands throughout its geographic range where it occurs, but which oak(s) it might use as hostplants in the wild remain unknown. At the Alexandria, Louisiana site where I collected the female, oak species that were in the immediate vicinity included *Quercus pagoda* (cherry bark oak), *Quercus stellata* (post oak), *Quercus marilandica* (blackjack oak), and *Quercus incana* (bluejack oak) (determinations by Mark Frank, Division of Plant Industry, Gainesville, FL).

I thank Marc Minno for putting together the plates for this paper, and Greg Ahlmark and Hugo Kons for providing photographs (the latter using a GT Vision imaging system). Larry Gall, Hugo Kons, and Robert Borth offered helpful discussion about all aspects of *Catocala*.

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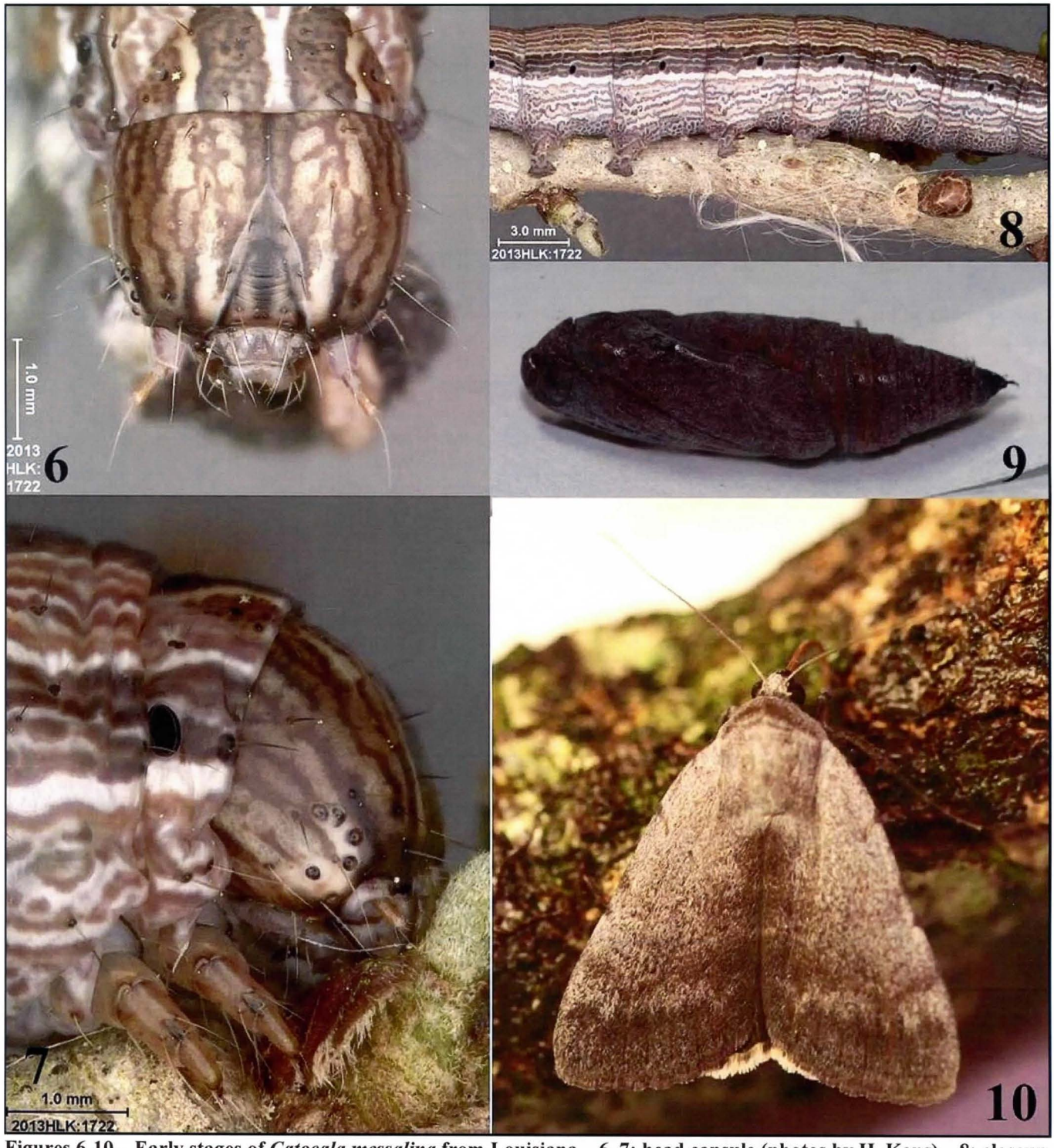
Figures 1-5. Early stages of *Catocala messalina* from Louisiana. 1, 2: egg (photos by G. Ahlmark). 3: early instar larva (photo by J. Slotten). 4, 5: mature larva (photos by H. Kons).



Figures 6-10. Early stages of *Catocala messalina* from Louisiana. 6, 7: head capsule (photos by H. Kons). 8: closeup of body segments (photo by H. Kons). 9: pupa (photo by H. Kons). 10: reared adult female (photo by J. Slotten).

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REPORTS OF STATE COORDINATORS

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

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

Mack sends in the following report from David Rupe:

Records from the Cove Creek Road area (south of Prairie Grove) in Washington County, Arkansas.
Pholisora catullus 23-Aug-2015
Anatrytone logan logan 21-Aug-2015 (several individuals on *Cirsium* sp.)

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

Charlie sends in his records for June and July in Gainesville, Alachua Co. Comment: *"amazing number of days with rain, some of it over 3 inches per storm."*

U. proteus, June 18, July 8
U. dorantes, June 30
E. horatius, June 18
H. phyleus, June 16, 20, July 24
P. ocola, June 16, 20, July 8
B. polydamas, June 19
P. polyxenes asterius, July 7, 22
P. glaucus, June 20, 25
P. troilus, June 20, July 4
H. cresphontes, June 20, July 3, 7
P. sennae, July 24
A. nicippe, June 18, July7
V. atalanta, July 24
L. arthemis astyanax, July 24
J. coenia, June 20
H. charithonius, June 4, 19, 28, July 7
A. vanillae, Jun 20, July 4, 7, 8, 24
A. clyton, June 16
D. plexippus, June 4, 20, 28

Moth:
Citheronia regalis, June 18 (found dead)

Florida Notes

Marc Minno filed the following report:

I had a new butterfly in our yard today. Around 5:00 pm, July 18, 2015, I saw a female Monk Skipper (*Asbolis capucinus*) in our yard in Gainesville. It perched with wings open in the sun about 8 feet up in an elm tree. I got a step ladder and had a good view of it, but when I tried to take a picture, it flew off. Hopefully it laid eggs on some of our palms.

I don't know if this is a new county record. It seems like someone must have seen it in Gainesville before (I have reported it. CVC). I've seen the Monk Skippers before in Marion County.

As she departed Alachua County permanently for her home in Tennessee, Kathy Malone provided her total "yard list" for the 10 years she lived here. They are listed below by common name:

"Hi Charlie, you asked for this some time ago. I wasn't sure what the exact number was until I wrote it out! Started keeping track in March 15, 2005, when we planted our garden. We have some 60 species of native plants we planted in a former longleaf pine sandhill habitat; now an "oak tree habitat." (One ancient Longleaf remains in our neighborhood and it is in our yard.) Some were seen only once: Zarucco, White Peacock, Orange-barred Sulphur, Orange Sulphur, Viceroy, Byssus, Southern Skipperling, Hoary-edged Skipper, Brazilian Skipper, Cabbage White. I added the Striped Hairstreak, Sweadner's Juniper Hairstreak, Viceroy, Question Mark and Twin-spot Skipper only in the last several months"

1. Palamedes Swallowtail
2. Eastern Tiger Swallowtail
3. Zebra Swallowtail
4. Spicebush Swallowtail
5. Giant Swallowtail
6. Pipevine Swallowtail
7. Cloudless Sulphur
8. Sleepy Orange
9. Barred Yellow
10. Little Yellow
11. Checkered white
12. Orange Sulphur
13. Dainty Sulphur
14. Orange-barred Sulphur
15. Cabbage White

16. Great Southern White
17. Gulf Fritillary
18. Zebra Heliconian
19. Red Admiral
20. American Lady
21. Common Buckeye
22. Goatweed Leafwing
23. Monarch
24. Horace's Duskywing
25. Whirlabout Skipper
26. Fiery Skipper
27. Sachem Skipper
28. Pearl Crescent
29. Phaon Crescent
30. White-M Hairstreak
31. Red-banded Hairstreak
32. Ocola Skipper
33. Gray Hairstreak
34. Carolina Satyr
35. Little Wood Satyr
36. Red-spotted Purple
37. Southern Oak Hairstreak
38. American Snout
39. Variegated Fritillary
40. Clouded Skipper
41. Tropical Checkered-Skipper
42. White Checkered-Skipper
43. Queen
44. Southern Skipperling
45. Hackberry Emperor
46. Black Swallowtail
47. Tawny Emperor
48. Long-tailed Skipper
49. Great Purple Hairstreak
50. White Peacock
51. Painted Lady
52. Southern Broken-Dash
53. Zarucco Duskywing
54. Eufala Skipper
55. Ceraunus Blue
56. Dorantes Longtail
57. Silver-spotted Skipper
58. Byssus Skipper
59. Northern Cloudywing
60. Brazilian Skipper
61. Twin-spot Skipper
62. Variegated Fritillary
63. Hoary-edged Skipper
64. Baracoa Skipper
65. Juvenal's Duskywing
66. Banded Hairstreak
67. Striped Hairstreak
68. Sweadner's Juniper Hairstreak
69. Viceroy
70. Cassius Blue
71. Question Mark
72. Long-tailed Skipper

Barbara Woodmansee reported 5 *Satyrium kingi* last instar larva on sweetleaf host plants on April 12 at San Felasco Hammock, and one adult *Megathymus yuccae* at the San Felasco powerline (Alachua Co).

Jeff Slotten reports the following from his home in Blues Creek, Alachua County, 3 *Synanthedon geliformis* (Sesiidae) in bait trap, March 5 - 8; *Amphion floridensis* and *Sphecodina abbottii* in the bait trap from March 8 through mid-May. Some mating pairs of *floridensis* and *abbottii* were observed, but no ova were laid by the separated females.

Hermeuptychia sosybius or *intricata* was recorded in the bait traps in small numbers beginning March 8. *Catocala clintoni* came to my bait trap and U.V. live cage light, April 18. On May 3 the following *Catocala* were present in the bait trap; *C. insolabilis, C. micronympha* (several forms), *C. coccinata sinuosa, C. andromedae, C. gracilis* including form *lemmeri, C. epione* and *C. charlottae* (1). On May 11 *Catocala* were present in the bait trap: *C. orba* (1), *C. micronympha, C. ilia, C. umbrosa, C. epione* and *C. insolabilis*. On June 22 the following *Catocala* were present in the bait trap; *C. sappho, C.muliercula, C. insolabilis*. These three species were also present in the light trap with an additional species, *C. lachrymosa* (several forms) present only in the light trap. *C. sappho, muliercula* and *insolabilis* were also present in the light trap. For some reason, *C. lachrymosa* does not come to my bait trap. It is possible that they might fly in and get out by the time it gets light in the morning.

Tom Neal sends in the following note:

Collected *Asbolis capucinus* at some *Cordia boissieri* flowers in my yard at 1705 NW 23rd Street, Gainesville, FL, on 26 August 2015. Of course it can be common farther south, especially along the coast, but I have never seen it here before.

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

The contributors include James Adams (JKA or no notation), 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 2015 unless otherwise specified.

Carbondale, I-75 exit 326, Whitfield Co.:
SPHINGIDAE: *Sphinx francki*, Aug. 13; *Manduca jasminearum*, Aug. 18; *Paonias astylus*, Aug. 20.
EREBIDAE: *Catocala obscura,* Aug. 17.

Calhoun (my residence – 346 Sunset Drive SE), Gordon Co.:
EREBIDAE: *Dinumma deponens*, July 20; *Catocala maestosa*, Aug. 5.

6638 Red Bud Rd., Ranger, Gordon Co., August 29:
LASIOCAMPIDAE: *Heteropacha rileyana* (COUNTY).

Salacoa Creek, 5 mi. ESE of Fairmount, Bartow Co., August 29:
GEOMETRIDAE: *Cepphis decoloraria*. **NOCTUIDAE**: *Basilodes pepita* (15), *Resapamea trigona.*

Ohoopee Dunes, Tract 3 (Hall's Bridge tract), 8 mi.WSW of Swainsboro, Emanuel Co., with Patrick Adams: Sept. 5-6:
COSMOPTERIGIDAE: *Euclemensia bassetella*. **ATTEVIDAE**: *Atteva aurea*. **OECOPHORIDAE**: *Antaeotricha schlaegeri, Inga cretacea*. **LIMACODIDAE**: *Prolimacodes badia, Apoda rectilinea, Lithcodes fasciola*. **CRAMBIDAE**: *Uresephita reversalis, Pyrausta acrionalis, P. laticlavia, Spodalea recurvalis, Ategumia ebulialis, Desmia funeralis, Nomophila nearctica*. **PYRALIDAE**: *Lepidomys irrenosa*. **GEOMETRIDAE**: *Eumacaria madopata, Macaria distribuaria, Fernaldella georgiana, Tornos scolopacinarius, Anavitrinella pampinaria, Hypomecis umbrosaria, Hypagyrtis unipunctata, Euchlaena obtusaria, E. madusaria,Pero morrisonaria, Besma endropiaria, Scopula limboundata*. **SATURNIIDAE**: *Anisota virginiensis pellucida, Automeris io*. **LASIOCAMPIDAE**: *Tolype notialis*. **BOMBYCIDAE**: *Apatelodes torrefacta, Olceclostera indistincta*. **SPHINGIDAE**: *Lapara coniferarum, Enyo lugubris, Paonias excaecatus, P. myops, Darapsa myron*. **NOTONDONTIDAE**: *Datana robusta, Heterocampa obliqua, H. varia, H. umbrata, Hyperaeschra georgica, Hyparpax aurora,* New genus new species (COUNTY, to be described in the upcoming MONA fascicle), *Schizura ipomoeae, Nadata gibbosa*. **EREBIDAE**: *Cisthene subjecta, Hypoprepia fucosa, Virbia rubicundaria, V. laeta, Halysidota tesselaris, Orgyia definita, Idia americalis, Renia fraternalis, Palthis angulalis, Hypena scabra, Lesmone detrahens, Hemeroplanis habitalis, Scolecocampa liburna, Caenurgia chloropha, Anticarsia gemmatilis, Argyrostrotis deleta, A. anilis, Metalectra tantillus, Ptichodis herbarum, Parallelia bistriaris, Panopoda rufimargo, P. carneicosta, Pangrapta decoralis*. **NOCTUIDAE**: *Ctenoplusia oxygramma, Chrysodeixis includens, Enigmogramma basigera, Argyrogramma verrucae, Marimatha nigrofimbria, Ponometia erastrioides, Acronicta morula, A. brumosa, A. afflicta, A. tritona, Polygrammate hebraeicum, Panthea furcilla, Eudryas unio, Condica sutor, Galgula partita, Helicoverpa zea, Schinia sordida, S. trifascia, S. psamathea, S. sanguinea, S. fulleri, S. scissoides, S. lynx, S. rivulosa, Elaphria grata, E. nucicolora, Sideridis ruisa, Mythimna unipuncta, Anicla infecta, A. sullivani* (COUNTY), *Noctua pronuba.*

Ohoopee Dunes, Tract 4 (Covena tract), 9 mi. SW of Swainsboro, Emanuel Co., with Patrick Adams: Sept. 6-7:
COSMOPTERIGIDAE: *Euclemensia bassetella*. **ATTEVIDAE**: *Atteva aurea*. **OECOPHORIDAE**: *Antaeotricha schlaegeri, Inga cretacea*. **LIMACODIDAE**: *Parasa chloris*. **ZYGAENIDAE**: *Acoloithis falsarius*. **CRAMBIDAE**: *Pyrausta acrionalis, P. laticlavia, Spodalea recurvalis, Ategumia ebulialis, Argyria lacteela*. **PYRALIDAE**: *Lepidomys irrenosa*. **GEOMETRIDAE**: *Nematocampa baggetaria, Eumacaria madopata, Macaria aequiferaria, Tornos scolopacinarius, Anavitrinella pampinaria, Iridopsis defectaria, Hypomecis umbrosaria, Epimecis hortaria, Melanolophia canadaria, Hypagyrtis esther, H. unipunctata, Euchlaena amoenaria, Pero morrisonaria, Probole amicaria, Besma endropiaria, Eutrapela clemataria, Prochoerodes lineola, Cyclophora myrtaria, Idaea tacturata, I demissaria, Scopula timandrata, Costaconvexa centrostrigaria, Eupithecia miserulata, Disclisioprocta stellata*. **SATURNIIDAE**: *Eacles imperialis, Callosamia angulifera*. **LASIOCAMPIDAE**: *Artace cribraria, Tolype notialis*. **BOMBYCIDAE**: *Apatelodes torrefacta, Olceclostera indistincta*. **SPHINGIDAE**: *Ceratomia undulosa, C. catalpae, Lapara coniferarum, Enyo lugubris, Paonias excaecatus, P. myops, Darapsa myron*. **NOTONDONTIDAE**: *Datana drexelli, Heterocampa obliqua, H. umbrata, Peridea angulosa, Hyparpax aurora, Schizura ipomoeae, S. concinna, Nadata gibbosa, Symmerista* sp. **EREBIDAE**: *Cisthene subjecta, Hypoprepia fucosa, Virbia opella, V. rubicundaria, V. laeta, Spilosoma congrua, Pyrrharctia isabella, Halysidota tesselaris, Cisseps fulvicollis, Dasychira manto, Idia americalis, I. aemula, I. rotundalis, I. diminuendis, Nigetia formosalis, Arugisa lutea, Lesmone detrahens, L. hinna, Hemeroplanis habitalis, Scolecocampa liburna, Phyprosopus callitrichoides, Hyperstrotia nana, Caenurgia chloropha, Anticarsia gemmatilis, Argyrostrotis flavistriaria, A. anilis, Ptichodis herbarum, Mocis disseverans, Panopoda rufimargo, P. carneicosta, Pangrapta decoralis*. **NOCTUIDAE**: *Chrysodeixis includens, Marimatha nigrofimbria, Acronicta americana, A. lobeliae, A. haesitata, A. vinnula, A. brumosa, A. afflicta, A. tritona, Polygrammate hebraeicum, Charadra deridens, Condica concisa* (COUNTY), *C. videns, C. mobilis, Heliothis virescens, Schinia sordida, S. trifascia, S. arefacta, S. rivulosa, S. scissoides, S. fulleri, S. lynx, Sideridis ruisa, Mythimna unipuncta, Leucania extincta, Anicla infecta, Agrotis venerabilis, A ipsilon.*

Sapelo Island, McIntosh Co., JH, LD, and BS:
The following species are new or nearly new for the island:

GEOMETRIDAE: *Idaea microphysa*, Aug. 17-18 (STATE). **SATURNIIDAE**: *Anisota stigma*, Aug 17-18.

The following micro species are considered some of the potentially most interesting records from the island; the comments are from BS:

GELECHIIDAE: *Chionodes imber*, 18 Oct. 2012 (JH); *Dichomeris citrifoliella* - probably not especially unusual, but the first time I've seen it - 10 May 2012 (LD), 21 Feb 2013 (JH). **SESIIDAE**: *Synanthedon sapygaeformis*, 25 Jun 2014 (JH). **TORTRICIDAE**: "*Phaneta*" ca. *grindeliana* - may be this species or something close - 7 Sep 2013 (BS); *Eucosma notialis*, 7 Sep 2013 (BS); *Sparganothis azulispecca* - this newly described species seems pretty common on the island- 3 Apr 2014 (JH); *Aethes promptana,* 9 May 2013 (BS). **PYRALIDAE**: *Homoeosoma ammonastes* - described from NC - 8 Sep 2013 (BS); *Unadilla maturella* - first one I've seen and confirmed by dissection - 14 Sep 2012 (LD); *Baphala phaeolella* - seems to be this species - coloring matches - no genitalic differences apparent from *B. pallida* - 8 Sep 2013 (BS); *Peoria luteicostella* - apparently somewhat common on the island - 7 Sep 2013, 9 May 2013 (both BS); *Arivaca albicostella* - quite common on the dunes - at least two broods - 7 Sep 2013 (BS), 9 May 2013 (BS), 10 May 2012 (LD), 14 Sep 2012 (LD), 24 Aug 2012 (LD).

12344 Hwy. 99, Darien, 31° 25' 39" -81° 23' 58", McIntosh Co., Aug. 24, Doris Cohrs:
EREBIDAE: *Dasychira dominickaria* (COUNTY).

Buffalo Swamp Tract of Altamaha WMA, McIntosh County, Sept. 8, Giff Beaton:
RIODINIDAE: *Calephelis virginiensis*.

Calephelis virginiensis
(Photos by Giff Beaton)

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

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

All records by Ricky Patterson unless otherwise indicated:

29 April 2015, Camp Hood Boy Scout Camp, near Hazelhurst, Copiah county, *Satyrium favonius ontario, Polites verna*

21 May 2015, 3.2 miles east of Lorman, Jefferson county, *Lytrosis unitaria*

23 May 2015, Legion State Park, Winston county, *Autochton cellus* (reported by Charles Bryson and John McDonald)

14 May 2015, Camp Hood Boy Scout Camp, near Hazelhurst, Copiah county, *Satyrium liparops strigosum, Eurema daira daira, Polites vibex vibex*

17 June 2015, Bienville National Forest, road FR 518 east of Harrell Hill Prairie, Scott county, *Cercyonis pegala* (near *alope*),

28 June 2015, 3 miles west of Palmetto, Lee county, *Cercyonis pegala alope,*

2 July 2015, Bienville National Forest, road FR 518 east of Harrell Prairie, Scott county, *Cercyonis pegala* (near *alope*), *Eurema daira daira, Pyrisitia lisa lisa*

8 July 2015, Natchez Trace Parkway mile marker 210, Webster county, *Cercyonis pegala alope*

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

Butterfly Records

The following selected butterfly records were submitted by Harry LeGrand. Records are from June through August 2015. Names in parentheses are counties.

Summer 2015 across the state was rather normal in terms of temperature, with no major heat waves or cool spells. However, the western and central portions were drier than usual, with some people complaining of "drought", though the dryness likely had little negative effect on the butterflies. Numbers that have been depressed for 2 ½ years were beginning to rebound, with most species at least approaching population sizes of pre-2013 levels. However, very few immigrant species were detected, and there were no out-of-range strays. *Vanessa cardui* sightings remained quite rare, and *Danaus plexippus* numbers also were somewhat alarmingly low across the region.

PIERIDAE:

Pyrisitia lisa, this migrant remained scarce across the state during the season, and most records surprisingly came from the mountains, suggesting a push from the west or southwest rather than northward from south Atlantic states. Steve Hall and Harry LeGrand saw at least five on several dates in mid-July in Cherokee County for the best totals.

LYCAENIDAE:

Satyrium kingi, only the third known record for the mountains was one photographed near Old Fort (McDowell) **(COUNTY)** on June 27 by Nancy Cowal. The species was also reported in Brunswick, Moore, Craven, and Onslow counties, all within the range in the Coastal Plain. Of these, the most notable was one photographed by Hunter Phillips in his yard in Holly Ridge (Onslow) on June 14; this is the first report from this county in over 35 years.

Satyrium favonius, rarely reported in recent years from northern coastal areas, Kristy Baker photographed one at Pine Island Audubon Sanctuary (Currituck) on June 9, and two more farther south in Buxton Woods (Dare) on June 10. These were of the *ontario* subspecies, whereas the only reports of the nominate *S. f. favonius* subspecies were, as expected, from the Brunswick County coast.

Callophrys hesseli, Harry LeGrand saw two at a new site in east-central Brunswick County on July 22, though there are numerous records from the nearby Green Swamp Preserve. The only other report came from Lake Aberdeen (Moore), where Richard Stickney found two on July 20.

Erora laeta, this rarely seen species was well photographed by Dave Patton in southwestern Watauga County **(COUNTY)** on August 5. The individual was so fresh, and by two days the latest ever for the state, that perhaps it was a very rare individual of the "mythical" third brood reported in some references. (The flight charts for the state clearly show only two broods.)

NYMPHALIDAE:

Agraulis vanillae, Will Cook saw one in his yard in Durham on the rather early date of June 26; the species is scarce that far north in the state. Along the Virginia line, where very rare, one was photographed by Joe Mickey in his yard in State Road (Surry) **(COUNTY),** on August 3.

Speyeria diana, among the many seasonal reports, the highest count was eight males seen in Madison County on June 18 by Gail Lankford and party. Rare for the Piedmont were one seen at Crowders Mountain State Park (Gaston) on June 22 by George Andrews, and two seen in the Polk County foothills on August 1 by David Campbell.

Chlosyne nycteis, though somewhat near the eastern edge of the range, the Durham butterfly count tallied a remarkable 132 individuals on August 16 (*fide* Jeff Pippen); these are presumably from the third brood at this location.

Phyciodes phaon, the second highest count ever in the state was the 148 carefully tallied by Tom Stock at a known location at Cape Hatteras Point (Dare) on August 6.

Vanessa cardui, this species remained scarce all summer across the state. Most surprising were three (one photographed) at Crowders Mountain State Park (Gaston) by George Andrews on June 4. The only other reports came from Buncombe, Mecklenburg, and Randolph counties.

Lethe anthedon, Richard Stickney expanded the range slightly to the southeast where he saw one at Lake Aberdeen (Moore) **(COUNTY)** on July 20. This is the first report for the Sandhills region of the state, though it has been seen not too far away along the edge of the Piedmont in several nearby counties.

HESPERIIDAE:

Erynnis martialis, the only report for this declining rarity was at a known site in Madison County, where found by Gail Lankford and party on July 20.

Erynnis baptisiae, an excellent Piedmont count, especially by a single party, was 13 noted by Bud Webster and others at Pennys Bend Preserve in Durham County on June 14. This site has a large population of the locally rare *Baptisia australis*, the foodplant at the site.

Wallengrenia otho, the species is surprisingly scarce in the southern mountains, perhaps owing to poor survey efforts. Harry LeGrand saw a fresh individual in western Cherokee County **(COUNTY)** on August 15 to fill a hole in the range in the southwestern tip of the state.

Polites peckius, the second highest state count was the excellent 43 tallied on the Transylvania County butterfly count on August 13 (*fide* Ruth Young).

Problema byssus, the species is rare in the first brood, especially in the Piedmont. Thus, singles seen on June 14 and June 17 at Yates Mill County Park in Wake County by Richard Stickney were a good find. Harry LeGrand saw one in an arboretum in nearby Raleigh on August 22, a notable record for a suburban setting.

Poanes yehl, this species has a tiny first brood in the Piedmont and is generally found in the province only along the southeastern edge. Here, Richard Stickney found three at a known site in southeastern Chatham County on June 7.

Euphyes pilatka, one seen at Cape Hatteras Point (Dare) was a good sighting there, and the date of August 6 is in the dip between broods; perhaps it was a late first brood individual.

Euphyes dion, at the western edge of the species' range were three seen by David Campbell in a marshy area near Columbus (Polk) on August 1.

Euphyes berryi, the only report for the season was one well photographed at a known site in Craven County on August 22 by Matt Orsie.

Amblyscirtes reversa, only the second record for the mountain region was one photographed by Jason Love in his yard near Otto (Macon) **(COUNTY)** on June 9. The previous mountain record is from low elevations in Great Smoky Mountains National Park (Swain). Matt Orsie and party tallied a good one-day total of six individuals in Craven County on August 22. This species is much less numerous there than is *A. carolina,* of which they tallied a very good 37 on the same date in the same area of Croatan National Forest.

Moth Records

This was a busy summer for moth observations, with records coming in from Cape Hatteras to the Tennessee state line. In addition to individual contributions, Moth Nights were held at Morrow Mountain State Park (Stanly County), Eno River State Park (Orange County), and Leigh Farm State Historical Site (Orange County). Other site surveys conducted in Duke Forest (Orange County), the Nantahala National Forest (Cherokee County), Cape Hatteras National Seashore (Dare County) and Yellow Mountain State Natural Area (Avery County). The following selected records were submitted by: Jesse Anderson (JA), Parker Backstrom (PB), Kevin Bischoff (KB), Brian Bockhahn (BB), Pat Coin (PC), Ed Corey (EC), Tony DeSantis (TD), Jake Gardner (JG), Steve Hall (SH), Kyle Kittleberger (KK), Harry LeGrand (HL), Britta Muiznieks (BM), Paul Scharf (PS), Ed Schwartzman (ES), Clyde Sorenson (CS) and Nate Swick (NS).

GELECHIIDAE:

Sinoe chambersi -- MAR 5, Warren County, PS **(STATE)**

GLYPHIPTERIGIDAE:

Drymoana blanchardi -- JUL 5, Dare County, BM

MEGALOPYGIDAE:

Norape ovina -- JUL 22, Stanly County, BB/PS; JUL 24, Orange County, BB/PC/CS; JUL 29, Lee County, PB; AUG 6, Warren County, PS

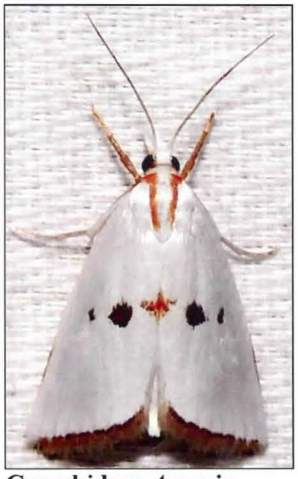
Packardia elegans -- JUN 18, Avery County, BB/PS/KK

CRAMBIDAE:

Argyria tripsacas -- JUN 7, Dare County, BM **(STATE)**

Epina dichromella -- MAY 27, Dare County, BM

Glyphodes pyloalis -- JUN 25, Guilford County, NS



Crambidae: *Argyria tripsacas* (photo by Britta Muiznieks)

Crambidae: *Epina dichromella* (female) (photo by Britta Muiznieks)

Crambidae: *Epina dichromella* (male) (photo by Britta Muiznieks)

PYRALIDAE:

Coenochroa bipunctella -- JUN 12, Dare County, BM

GEOMETRIDAE:

Mellilla xanthometata -- APR 8, MAY 16, AUG 4, 5, 27, Chatham County, PB; MAY 12, JUN 12, JUL 14, Orange County, SH (one of the few widespread Honeylocust feeders)

Scopula aemulata -- JUL 28, 30, Dare County, BM

Scopula ordinata -- JUL 21, Stanly County, SH/BB/PS

Hydrelia condensata -- JUN 15, Alleghany County, EC/JA/JG

Geometridae: *Scopula ordinata* (photo by Steve Hall)

SATURNIIDAE:

Citheronia regalis -- MAY 20, JUN 3, 6, 17, JUL 9, AUG 19, 20, 21, Chatham County, PB

Citheronia sepulcralis -- JUN 8, Lee County, PB; JUL 27, AUG 11, 13, 17, 19, Chatham County, PB

Sphingicampa bicolor -- AUG 6, 27, Chatham County, PB

Sphingicampa bisecta -- AUG 17, Chatham County, PB

SPHINGIDAE:

Dolba hyloeus -- AUG 10, Lee County, PB

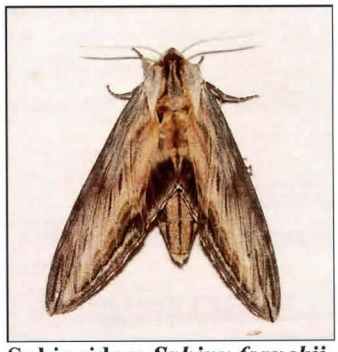
Sphinx franckii -- AUG 6, 21, Chatham County, PB

Sphinx kalmiae -- AUG 14, Chatham County, PB

Eumorpha fasciatus -- AUG 26, Burke County, KB

Sphecodina abbottii -- JUN 18, Avery County, BB/PS/KK; JUL 19, Orange County, SH (seen at sap flow after dark)

Amphion floridensis -- JUL 19, Orange County, SH (seen at sap flow after dark)



Sphingidae: *Sphinx franckii* (photo by Parker Backstrom)

NOTODONTIDAE:

Cerura scitiscripta -- AUG 16, Chatham County, PB

Symmerista leucitys -- JUN 18, Avery County, BB/PS/KK

EREBIDAE:

Cycnia inopinatus -- JUL 21, Stanly County, SH

Dasychira atrivenosa -- AUG 24, Lee County, PB

Idia majoralis -- AUG 11, Cherokee County, SH/HL/ES (third record for the state)

Erebidae: *Dasychira atrivenosa* (photo by Parker Backstrom)

Zanclognatha dentata -- AUG 11, Cherokee County, SH/HL/ES
Dyspyralis illocata -- AUG 11, Cherokee County, SH/HL/ES
Parahypenodes quadralis -- AUG 13, Cherokee County, SH/HL/ES (third record for the state)
Arugisa latiorella -- AUG 11, Cherokee County, SH/HL/ES (far outnumbering *A. lutea*)
Dinumma deponens -- JUN 18, Avery County, BB/PS/KK; JUL 8, Orange County, TD; AUG 5, Chatham County, PB (newly invading species)
Zale bethunei -- JUL 22, Stanly County, BB/PS
Euparthenos nubilis -- JUL 2, Lee County, PB
Spiloloma lunilinea -- JUL 24, Orange County, BB/PC/CS (another widespread Honeylocust feeder)

Erebidae: *Dinumma deponens* (photo by Parker Backstrom)

NOCTUIDAE:
Diachrysia balluca -- JUN 19, Avery County, BB/PS/KK
Eosphoropteryx thyatyroides -- JUN 18, Avery County, BB/PS/KK
Autographa ampla -- JUN 18, Avery County, BB/PS/KK
Eudryas unio -- AUG 14, Chatham County, PB
Apamea nigrior -- JUN 18, Avery County, BB/PS/KK
Apamea sordens -- JUN 18, Avery County, BB/PS/KK
Niphonyx segregata -- AUG 19, Chatham County, PB
Stiria rugifrons -- AUG 13, Cherokee County, SH/HL/ES (third record for the state)
Euxoa scholastica -- JUN 20, Avery County, BB/PS/KK
Diarsia jucunda -- JUN 17, Avery County, BB/PS/KK
Anaplectoides prasina -- JUN 18, Avery County, BB/PS/KK
Anaplectoides brunneomedia -- JUN 18, Avery County, BB/PS/KK
Schinia siren -- AUG 17, 21, Lee County, PB
Schinia nubila -- AUG 17, Lee County, PB

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

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

John sends in the following record for Tennessee:
Citheronia sepuleralis, TN, Sequatchie county, 15 June 2015, leg. Eric Smith.

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

Ed sends in the following report:

This report focuses on two trips made by Ed Knudson & Charles Bordelon. The first was to Palo Duro Canyon SP from June 17-June 26 with several interesting stops along the way, especially in D'hanis (Medina Co.) and Utopia (Uvalde Co.). There was lots of rain at the beginning of the trip and mostly dry conditions further north.

The second trip was focused on Colorado and Wyoming, Knudson & Bordelon, July 12- 25. We will not mention anything from north of Texas, but it was an amazing trip. Two stops in Dalhart (Dallam Co.) provided some interesting moths including a few state records.

Cossidae: *Givira theodori* was common everywhere we stayed in Texas to Walsenberg CO. It was common at Palo Duro Canyon, 23-VI-15 and later in Dalhart on 13-VII-15.

Zygaenidae: *Harrisina metallica* was found at Dalhart on 23-VII-15. It is infrequent in TX.

Tortricidae: *Choristoneura conflictana* Dalhart, 13-VII-15. This large species feeds on aspen, wherever it is found. Since this host is not found in the Texas panhandle, perhaps is can also feed on Cottonwood (New for TX).

Crambidae: *Diastictis robustior* Palo Duro Canyon, 23-VI-15.

Sphingidae: *Sphinx libocedrus* Palo Duro Canyon, 23-VI-15 (common); *Isoparce cupressi* Utopia, 18-VI-15. This may be the first example collected in the TX Hill Country. *Eumorpha achemon* Palo Duro Canyon, 23-VI-15.

Notodontidae: *Elasmia cave* Utopia, 18-VI-15; *Elasmia packardi* Palo Duro Canyon, 23-VI-15.

Erebidae (Arctiinae): *Cycnia inopinatus, Apantesis carlota* Palo Duro Canyon 23-VI-15.

Erebidae: *Zale rubiata* Palo Duro Canyon, 23-VI-15.

Noctuidae: *Ponometia pulchra, Melanchra picta, Scotogramma harnardi* Palo Duro Canyon *23-VI-15*; *Cucullia alfarata, D'hanis* (Medina Co) 18-VI-15 (May be second TX record); *Scotogramma inconcinna* (New TX record); *Striacosta albicosta* Dalhart, 23-VII-15.

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

Danaus plexippus, white form *nivosus*. Mona Miller of Herndon, VA., bred about 20 white Monarchs originating from locally-collected larvae in late June, which themselves produced normal adults, but those adults produced a subsequent generation of white adults in early August. A male specimen voucher was saved, emerged Aug. 19, 2015 (currently in my collection).

Hermeuptychia sosybius, Leesburg, VA. (Loudoun County record). Male and female collected by Harry Pavulaan on September 9, 2015. Male is *sosybius* by presence of FW androconia.

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