Southern Lepidopterists' NEWS

EST. 1978 Official Newsletter of the Southern Lepidopterists' Society (ISSN 2167-0285)

Vol. 44 NO. 1 **March, 2022**

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

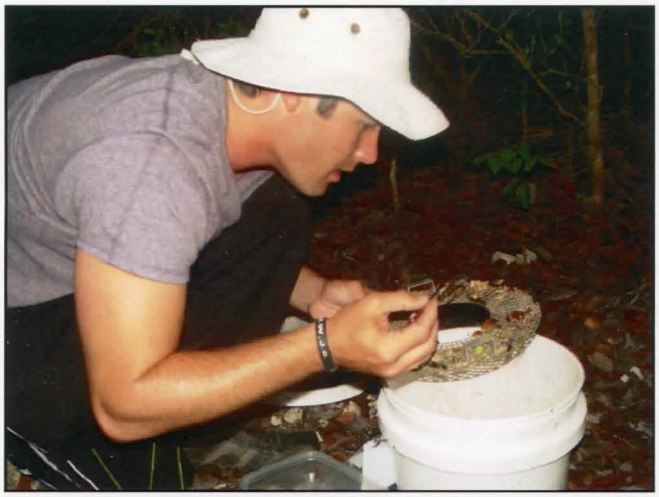
David Fine (our new Chairman), writes the following autobiography. When I was about 11 or 12 years old, my good friend William Nix introduced me to the Southern Lepidopterists' Society. His Father, Bill Nix, owned the printing shop where the Southern Leps news letters were being printed. Leroy Koehn, the former editor of the newsletter, strongly influenced my friend William and stimulated in him a passion for hunting butterflies and moths. As William and I collected together as childhood friends, I grew up hearing names like Leroy Koehn, Dave Baggett, Hermann Flaschka and Jeff Slotten. It would be another 7 or 8 years before I actually became a member myself.

After returning from a Southern Leps Soc meeting, William started telling me stories about these guys and their bug hunting adventures which took on a quite fantastic sense of lore that in some rights, still exists today! I absolutely love the Southern Lepidopterists' Society and it is truly my honor and privilege to be elected to serve as this years' Chairman and to serve alongside the men and women who have contributed untold hours and efforts to the advancement of knowledge of the Lepidoptera of the Southern United States.

My story certainly starts with my father, Lawrence Fine. He was born in the town of Kitwe, Zambia, in the heart of Central Africa. His parents were missionaries and have a beautiful history in Zambia planting churches and starting one of the first Bible Colleges in Central Africa. My father's middle school principal was a butterfly collector and showed my father, along with my uncle Bob how to catch and curate a basic butterfly collection. They found a deep passion for hunting butterflies in the genus *Charaxes*. These butterflies could be collected by attracting them with fruit, off of carnivore dung and when my father would go big game hunting in the dry season, they told me stories of *Charaxes* butterflies swarming to sip the blood of the animals they were cleaning from their hunt.

David Fine with *Eumorpha* on his face!

My dad moved back to New Jersey when he was 18 years old to go to college. There he met my mom and a few years later they were married. About a year after I was born, the Fines moved to their house in Delray Beach, Florida, where they still live to this day. When I was 8 years old, my dad decided it was time to show me his butterfly collection. One by one, he pulled out tiny paper envelope corners and unfolded them showing me the butterflies inside. Perhaps the best part about it was that he had a story behind each specimen. As he opened them, I would see his eyes light up over and over as he reminisced to his childhood bringing me back to places called "Dola Hill", "Monkey Jungle" and the famous "*Charaxes* tree" in his neighbors' yard that had a frothy sap that attracted *Charaxes* of all kinds. He told me that they were nearly impossible to collect with a net because they sat at the interior of this dense, thorny bush. He and his brother decided they would shoot at them with pellet guns attempting to hit the heads of the butterflies. When the specimen would fall to the ground, they would mount it and glue the head of another "common" species on and place it proudly in their collection! I was absolutely mesmerized and demanded that he get me a butterfly net. From that time on, there was no looking back! My father remains to this day, my best collecting buddy!



David looking through light trap on No Name

In the Spring of 1997, when I was 19 years old, I finally joined the Southern Lepidopterists' Society. and wound up meeting Leroy Koehn who lived about a 30-minute drive north of me. I will never forget our first outing. After hearing all about him from my friend William for all those years, I was finally meeting him and going collecting with him. It felt like I was meeting a legend! We drove north looking for *Callophrys irus* and *Callophrys henrici* (the Frosted Elfin and Henry's Elfin) – While *C. henrici* was abundant in the Deland area, we only caught 1 specimen of *C. irus* which proudly rests in my collection today. That wound up being the only time I have ever seen the Frosted Elfin in the state of Florida.

***Oxydia cubana* on Big Pine Key, Florida**

Black Witch moth resting on a tree trunk in North Key Largo

I learned a lot from my dear old friend Leroy and wound up developing many wonderful relationships with other Lepidopterists such as Robert Beiriger, John Hyatt, Ricky Patterson, Jeff Slotten, James Adams, Mark Walker and more. Over the next 10 years, I would make it my personal goal to master the butterflies of the State of Florida. To date, I believe the only species of butterfly breeding in the State of Florida that I have yet to see is *Atrytone arogos* (the Arogos Skipper). Some of the trickiest species had proven to be the tropical butterfly species found in Miami-Dade and Monroe Counties. *Eunica tatila* (the Florida Purplewing), *Eunica monima* (the Dingy Purplewing) and *Chlorostrymon maesites* (the Amythest Hairstreak) evaded me for many years until fairly recently. My interest in moths at this point was largely based on Sphingids and Saturnids with the occasional "pretty" Noctuid or Arctiid.

In 2001, I scored a job working as a butterfly breeder in the laboratory at 'Butterfly World' in Coconut Creek, Florida, where I eventually wound up being the manager of the lab. Our weekly average number of eclosed butterflies was about 800-1,000. Over the next 5 years, I fine-tuned my ability to obtain eggs from various families of butterflies and moths and learned an untold

amount of tricks to care for caterpillars and keeping colonies of breeding butterflies. I am eternally grateful to Ron Boender, the owner of Butterfly World and to Alan Chin-Lee who was the lab manager upon my arrival on staff and is a beloved friend to this day, for giving me the opportunity to learn and grow in the field of butterfly husbandry. Using what I learned in the breeding laboratory at Butterfly World, I began to turn my focus on breeding the butterflies and moths of Florida and documenting their life cycles photographically and now by use of video.

The Fine family dressed up for a night of moth hunting at Bioblitz

Lorenzo and David Fine setting up bucket light traps in North Key Largo

In 2006, I married the love of my life. My wife, Noemi was born in the nation of El Salvador and moved to Florida when she was about 9 years old. She's taken me back to her home town of Corinto in the Salvadorian province of Morazan several times and it's been wonderful learning about the Salvadorian culture, eating pupusas and getting to know the loving and hospitable people of this humble nation. Noemi and I have two beautiful children; Sofia and Lorenzo. For the last 12 years, I have been employed as a minister at Calvary Chapel Fort Lauderdale and now an assistant pastor and oversee the Pastoral Care ministries at our church including Leadership Development, Benevolence, Convalescence, Hospital Visitation, Counseling and recently the Men's Ministry. While these ministries at our large church keep me quite busy, Noemi and I have found the ability to keep our priorities in check putting God and Family first, then career and ministry, then working in – violin, acrobatics, softball, baseball practices and as much fishing as we can with our two teenage kids while squeezing in butterflies and moths whenever possible.

Back in 2002, while dedicating my days off to trying to locate new colonies of the newly re-discovered Miami Blue butterfly in the Florida Keys, I began stumbling upon some amazing moth species at gas stations and shopping centers in the Keys that were tropical in nature and some of which have only been seen by a handful of people before. One of these species is the Cuban Sphinx – *Eupyrrhoglossum sagra*. It came to my understanding that there had never been a long-term comprehensive study of the moths of the Florida Keys and that this fauna was very poorly understood. I applied for collecting permits at Crocodile Lake National Wildlife Refuge in North Key Largo. Refuge manager (at the time) Steve Klett was a true gentleman and pleasure to work with and from 2002-2009 I surveyed the moths of this 10-mile stretch of tropical hardwood hammock on the west side of SR 905. In 2009, the project expanded to Key Deer Refuge in the Lower Keys and to date, between myself and Jim Troubridge, we have identified about 600 species of moths from the Florida Keys alone. This time challenged me to pay attention to all families of moths including the smallest of micros, to geometrids and tiny noctuids. This also began a series of public education programs that I hosted with attempts to open the eyes of the public the Monroe county to see that they have an incredibly rich fauna of nocturnal Lepidoptera in their back yards. We also hosted a few annual BIO-BLITZ events where we involved the public to take photographs of moths on a few given nights and email the photos to me. We identified 230 species of moths in the 4 day 2017 bio-blitz, which proved to be a fantastic event! Crocodile Lake Refuge manager; Jeremy Dixon and Kristie Killam, the Key Deer Refuge park ranger have become wonderful friends and have been great to work with during our survey.

Covid-19 put a temporary halt on my work down in the Keys and we are now re-grouping to begin getting back involved. In 2018, we decided to bring the KEYS MOTHS project into the world of YouTube to try and develop an on-line educational platform to share the amazing Lepidoptera of South Florida with the rest of the world. To date, the KEYS MOTHS YouTube channel has about 1500 subscribers and we are beginning to develop an on-line community. I try and post at least once a week and would love to have the support of the Southern Lepidopetrists' Society by checking out our KEYS MOTHS videos on YouTube and subscribing to the channel. I just started a series where I will be showing off the 600 moth species from the Florida Keys that we have identified so far. If you want to learn more about the butterflies and moths of South Florida and the Florida Keys, I think you will find our channel most interesting!

Aside from my passion of Lepidoptera; Sofia, Lorenzo and I are avid fishermen and have another YouTube channel based on our fishing adventures called "WATCH YOUR LIP". That channel is up to about 3500 subscribers! The goal of this channel is to create some revenue for the kids' college funds as we make how-to videos teaching people how to catch fish in the fresh and saltwater bodies in South Florida. From snakeheads to swordfish and everything in between, we are making it happen! To wrap up this bio, the Fine family has a true passion for the outdoors and teaching people how to appreciate and enjoy South Florida by showing them through photography and video the natural wonders that South Florida has to offer. But as much as we love butterflies, moths and fish, we have a big heart for building community around these passions because at the end of the day, we love people too!

The Faithful Beauty "*Composia fidelissima*" – the Keys Moths mascot

David holds a huge permit just caught on Pompano Beach, Florida

Larry Fine (David's father) as a teenager with a box full of Zambian *Charaxes* butterflies ←

I always liked this picture – don't know why? →

Please visit our website: www.keysmoths.com where we have photographed all 600 species of moths we have identified from the Florida Keys as well as about 100 butterfly species.

We invite you to look us up on Instagram @Keysmoths and @watchyourlip

Check out our YouTube channels @Keys Moths and @Watch Your Lip

(David Fine, E-Mail: davidf@calvaryftl.org)

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

SOUTHERN LEPIDOPTERISTS' SOCIETY, NEW OFFICERS

CONGRATULATIONS TO THE FOLLOWING NEWLY ELECTED OFFICERS FOR 2022-2023

CHAIRMAN:
David Fine, e-mail: Davidf@Calvaryftl.org

SECRETARY:
Laura Gaudette, e-mail: gaudettelaura@gmail.com

MEMBERS-AT-LARGE:
John Calhoun, e-mail: bretcal1@verizon.net
Lance Durden, e-mail: LDurden@GeorgiaSouthern.edu
Tom Neal, e-mail: chouwah@aol.com

Thanks to the SLS Nominating Committee [John Hyatt (Chair), Howard Grisham, Charles Watson] for implementing the election and counting votes.

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2022 SLS Annual Meeting Announcement

Welcome back to an in-person annual meeting! Please join us for the 70th Annual Meeting of the Lepidopterists' Society, held from Tuesday, June 14 – Friday June 17, 2022 in Cullowhee, North Carolina. We will be meeting in conjunction with the **Southern Lepidopterists' Society** and the **Tropical Lepidoptera Society**. The meeting will be hosted by Western Carolina University and Dr. James Costa. WCU is the westernmost university in the UNC system, located in a valley between the Blue Ridge and Great Smoky Mountains. Started in 1889, it is a comprehensive university for 11,000 undergraduates and graduates. Dr. Costa has been in the Department of Biology at WCU since 1996 and the director the Highlands Biological Station since 2005. He has studied and published extensively on social behavior in caterpillars and is a Darwin scholar, recently recognized as a finalist for the AAAS/Subaru Prize for his book "Darwin's Backyard: How Small Experiments Led to a Big Theory."

Field Trips (both collecting and observing) will be organized for Tuesday (14 June). If you plan on attending one of the Tuesday field trips or the organized Thursday moth night (after the BBQ), please fill out the field trip form (available on the website), and send it to Brian Scholtens (scholtensb@cofc.edu). If you register for a package that includes Tuesday, you will receive a box lunch for the field trip day.

The welcome reception will be on campus Tuesday evening. The Executive Council meeting of the Lepidopterists' Society is scheduled for Tuesday (14 June); the Southern Lepidopterists' Society business meeting will convene sometime Wednesday through Friday (to be announced). Talks are scheduled for Wednesday through Friday (15-17 June). The barbecue will be held Thursday evening (followed by blacklighting for anybody interested), and the banquet Friday evening. Main sessions, the Thursday BBQ, and the Friday banquet will be on campus, with housing conveniently located in Blue Ridge Hall on campus.

If you would rather not stay on campus, several hotels and motels are within easy driving distance. The closest is a Comfort Inn between Cullowhee and Sylva, just a few miles from campus, and there are several other hotel options within a 10-15 minute drive. If you Google "Sylva NC Hotels" you'll come up with that Comfort Inn, a Best Western, Holiday Inn, and smaller locally owned hotels like the Blue Ridge Inn. Please register as a commuter if you plan on staying in one of these locations.

Online registration is now available through WCU.

The conference has 4 different package options for registration.

Registration Deadline is June 1
LINK
https://wcupg.wcu.edu/C20252_ustores/web/product_detail.jsp?PRODUCTID=458&SINGLESTORE=true

Option #1 includes the full conference with a 5-night residence hall stay checking in on Monday (6/13) and departing Saturday (6/18) with breakfasts, lunches, the BBQ and banquet. Single or double occupancy rooms available. **$482 pp Single Occup/ $432 pp Dbl Occup.**

Option #2 includes the full conference with a 4-night stay, checking in on Tuesday (6/14) and departing Saturday (6/18) with breakfast, lunches, the BBQ and banquet. **$409 pp Single Occup/ $369 pp Dbl Occup.**

Option #3 includes the full conference with a 3-night stay, checking in on Tuesday (6/14) and departing FRIDAY (6/17: No Friday night stay). Includes breakfasts, lunches, the BBQ and banquet. **$331 pp Single Occup/ $301 pp Dbl Occup.**

Option #4 is for commuters staying off-campus. It includes the full conference with lunches, the BBQ and banquet, but no accommodations. **$199 per person.**

ABOUT ON-CAMPUS STAYS

University residence halls are wonderfully economical compared to traditional hotel prices. They are comfortable but very simple in terms of amenities. Your air-conditioned room will have 1 or 2 XL twin-sized beds with a basic linen package including a blanket, 2 sheets, a pillow w/ case and some towels and wash clothes. No more than 2 people will share a bath. Single occupancy rooms share a bath with the adjoining room (matched by gender) and double occupancy rooms have a private bath. Doubles are suited for couples. Free Wi-Fi is available to all conference guests.

WCU recommends bringing the following items with you for your stay:

- Your favorite extra pillow
- clothes hangers
- soap, shampoo and other toiletries
- an UMBRELLA
- an alarm clock
- a small bedside lamp (optional)
- an XL twin sized mattress pad (optional)

Meals at the Courtyard dining hall offer an all-you-can eat dining experience with many different options to suite a variety of tastes and dietary restrictions. Guests will have a conference card they can swipe for their meals. This same card will serve as your access card for your residence hall. Individual rooms will have a separate key.

Check-In Times

IMPORTANT: Check in times for Monday (6/13) and Tuesday (6/14) will be from 4pm until 8pm EST.

Please note that unlike traditional hotels, university residence halls are not staffed 24 hours a day. We ask participants to make every effort to check-in during the designated check-in times. It may not be possible to accommodate very late arrivals. If you know that you will have to arrive after these times, please let us know well ahead.

Directions and a map will be sent to all participants closer to the conference date.

If you have question about your stay or your registration please call WCU's Educational Outreach office at 828-227-7397 or email Bobby Hensley (hensley@wcu.edu).

We encourage contributed papers and posters by anyone who is interested in presenting! Please use the abstract submission form (available on the website) to give either a paper or a poster. Please submit abstracts electronically to Brian Scholtens (scholtensb@cofc.edu). Abstract submission will be open until June 1.

Western Carolina University is part of the University of North Carolina system. The picturesque campus is situated in the western North Carolina mountains at an elevation of about 2,100 feet (640 m) but elevations up

to about 6,000 feet (1,829 m) are adjacently accessible by road. Great Smoky Mountains National Park, Pisgah National Forest, and Nantahala National Forest are all within fairly close driving distance. Since WNC is located in the Appalachian Mountains, there is no direct way of travelling to Cullowhee. The closest airport is Asheville Regional Airport, in Asheville, NC, from here WCU is about 45 miles.

Links

Western North Carolina University: https://www.wcu.edu/

Highlands Biological Station: https://highlandsbiological.org/

North Carolina National Forests: https://www.fs.usda.gov/main/nfsnc/home

Asheville, North Carolina: https://www.exploreasheville.com/

Contact

The LepSoc 2020 meeting organizing committee consists of James Costa and Brian Scholtens. Please email **scholtensb@cofc.edu** with any questions regarding the meeting. **Hope to see you in North Carolina this June!**

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Monarch (*Danaus plexippus*). Egg on flower bud of green antelopehorn milkweed. April 1991. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross.

Monarch (*Danaus plexippus*). Last instar larva on green antelopehorn milkweed. April 2000. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross.

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MANY THANKS TO THE FOLLOWING DONORS TO THE SOUTHERN LEPIDOPTERISTS' SOCIETY

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WELCOME TO OUR NEW SOUTHERN LEPIDOPTERISTS' SOCIETY MEMBERS

Roy Cohutta
1918 Lullwater Rd.
Albany, Georgia

Patty Leslie Pasztor
126 Calumet Place
San Antonio, Texas 78209

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HYBLAEA PUERA (CRAMER, 1777) (LEPIDOPTERA: HYBLAEIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR. AND CHARLOTTE DOZAR BROU

Fig. 1. ***Hyblaea puera*** Louisiana phenotypes: (a-c) males, (d) female. All **Abita Entomological Study Site.*

Noctua puera Cramer, Type locality Suriname, Type probably lost, is currently a member of the genus ***Hyblaea*** Fabricius, 1793 which has around 42 currently recognized species worldwide. Because of the numerous similar appearing species, it is quite probable that among the great amount of public reports about ***Hyblaea puera*** (Cramer) around the world, some reports of this species may not be taxonomically accurate. An enormous amount of relevant literature about ***H. puera*** originates from countries which have significant Teak plantations, e.g. Bangladesh, India, Indonesia, Malaysia, Myanmar, Sri Lanka, and Thailand.

Teak wood is referred to by some as 'The King of Timber' and 'finest hardwood in the world' and is used in boat building, exterior construction of wood structures, beams, windows, doors, veneers, furniture and many other purposes, which need superior and unique characteristics or requirements. A large Teak tree found in Myanmar, is 27.5 feet (8.4m) in girth and 110 feet (34m) tall. Another record Teak tree from India was approximately 47.5 meters (156ft.) tall. Its age is between 450–500 years and is considered one of the oldest teak trees in the world (Wikipedia).

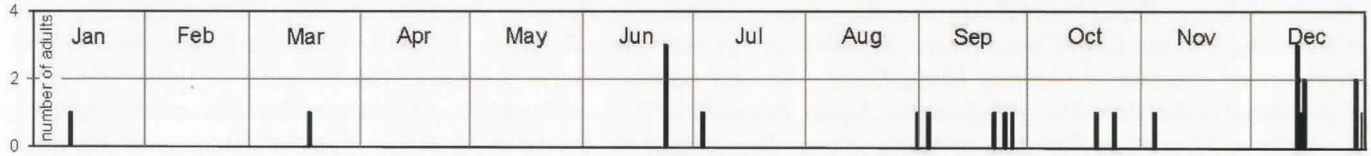

Fig. 2. Adult ***Hyblaea puera*** captured in Louisiana. n = 23

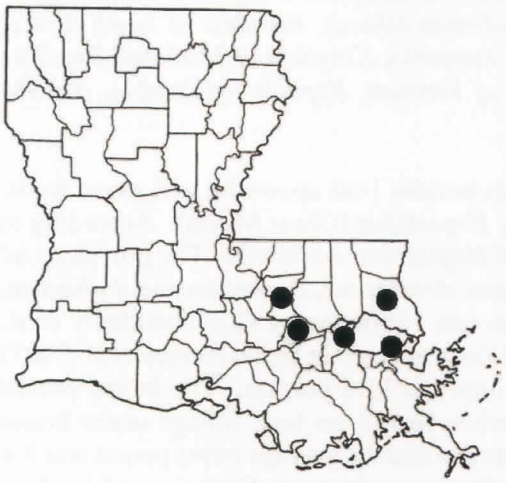

Fig. 3. Parish recordes for ***Hyblaea puera***.

The pantropical moth ***Hyblaea puera*** (Cramer) (Fig. 1) is an occasional visitor to Louisiana, and we have collected it over the past half century, first adult in 1972; all adults using automatic capture ultraviolet light traps. The earliest adult recorded in the state was labeled September 21-1959 in Baton Rouge, specimen located in the Louisiana State Arthropod Museum. This species is newly reported here for Louisiana. Most of the small number of specimens found in Louisiana were captured in the latter half of the year at the *Abita Entomological Study Site (Fig. 2).

Holland (1903) reported ***H. puera*** occasionally in Florida. Reported by Covell (1984) as common in all months in peninsular Florida. Heppner (2003) reported ***H. puera*** January - December in Florida, and found also in Texas, West Indies, Mexico - Argentina, and Old World tropics. Powell and Opler (2009) did not report ***H. puera*** for western North America. Checking with three collectors in the state of Mississippi, including the Mississippi State University collection, revealed no ***H. puera***.

The Louisiana parish records are illustrated in Fig. 3.

In some areas, e.g. Indonesia, Java, pupae of ***H. puera*** are collected by villagers and farmers for human consumption (Lukiwati, 2010). But, the most amazing use for ***H. puera*** was documented for the first time by **Oudhia** (2014), who

has been researching Traditional Medicinal Knowledge about Insects (Entomotherapy) for about 30 years in Chhattisgarh, Central India, population of 30 million people. Sonpatha (***Oroxylum indicum*** (L.) Benth. ex Kurz, family Bignoniaceae) is a well known medicinal herb in Chhattisgarh. This same researcher" *collected information on over 350 Formulations used both internally and externally in which the (**H. puera**) caterpillars are added as an important ingredient. Most of the Healers purify the collected caterpillars before using it as medicine. The native Kamar Healers are aware of its food value. Many Healers practicing Traditional Entomophagy are aware of its use with Indigenous Medicinal rice. Adults are also used but are not as popular as the caterpillars. In many cases when **Oroxylum** as a single remedy fails to give the desired effects, these caterpillars are added in the formulations to make it strong".* ***H. puera*** is a common insect in Chhattisgarth. Oudhia noted that the *"traditional healers of Gandai-Salewara and Narharpur regions frequently use this insect as medicine. Most of the healers want to conserve this knowledge as a secret. The healers prepare special oil from the caterpillars... full fed caterpillars are boiled in oil from Til (Sesame seeds), and when all watery contents evaporate, boiling is stopped and oil is kept for future use. Few healers add the herbs with the caterpillars but majority of the healers claimed that the full fed caterpillars are enough to give the desirable effects. The special oil is used externally in treatment of ear related troubles. In treatment of Otorrhea, few drops of oil are applied into the ears. It is considered as one of the promising treatments. The healers also use the oil in form of massage externally in treatment of rheumatic pain. I have observed that many herb vendors sell this special oil to the traditional healers and natives of neighboring states without disclosing its method of preparation". Oudhia further reported "I have tried this oil successfully in treatment of rheumatic pain".*

The moth ***H. puera,*** or its primary larval food plant (Teak) ***Tectona grandis*** Linnaeus are reported in scientific literature from: the *New World* (locations in North America, Central America, and South America): *Antigua and Barbuda, Argentine Republic, Barbados, Belize, Federative Republic of Brazil, Republic of Costa Rica, Republic of Cuba, Commonwealth of Dominica, Dominican Republic, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, United Mexican States, Republic of Panama, Commonwealth of Puerto Rico, Republic of Suriname, St Lucia, St Vincent and the Grenadines, Republic of Trinidad and Tobago, United States of America (Arizona, Florida, Louisiana, and Texas),* and the *Virgin Islands of the United States of America,* also from the *Old World: Commonwealth of Australia, People's Republic of Bangladesh, British Indian Ocean Territory, Nation of Brunei-the Abode of Peace, Republic of Botswana, Kingdom of Cambodia, People's Republic of China, Democratic Republic of the Congo, Republic of Côte d'Ivoire, Republic of Fiji, Gabonese Republic, Republic of Ghana, Grenadines, Guam, Republic of Equatorial Guinea, Hong Kong - Special Administrative Region of the People's Republic of China, Republic of India, Republic of Indonesia, Japan, Republic of Kenya, Republic of Maldives, Republic of Madagascar, Republic of Mauritius, Republic of Mozambique, Republic of the Union of Myanmar, Federal Democratic Republic of Nepal, Federal Republic of Nigeria, Lao People's Democratic Republic, New Caledonia, New Guinea, Malaysia, Sultanate of Oman, Islamic Republic of Pakistan, Republic of the Philippines, Réunion, Saba, Republic of Seychelles, Democratic Socialist Republic of Sri Lanka, Republic of Singapore, Solomon Islands, Republic of South Africa, Republic of the Sudan, Taiwan (Republic of China), United Republic of Tanzania, Kingdom of Thailand, Togolese Republic, Kingdom of Tonga, Republic of Uganda, Socialist Republic of Vietnam, Republic of Zambia, and the Republic of Zimbabwe.*

Scientific literature is replete with a long list of additional larval foodplants besides Teak upon which ***H. puera*** feeds. Moth larvae of many other families also feed upon Teak, e.g. the Family ***Hepialidae*** (Ghost Moths). According to Wikipedia (2022), there are at least 587 currently recognized species of ***Hepialidae*** worldwide. The polyphagous larvae of ***H. puera*** utilize many other plants of the families: ***Acanthaceae, Araliaceae, Bignoniaceae, Fabaceae, Juglandaceae, Lamiaceae, Myrtaceae, Oleaceae, Poaceae, Rhizoporaceae, Verbenaceae*** (Roychoudhury et al, 2021), and others. Beeson (1941) reported ***H. puera*** can have 14 generations per year. In India, Pandey et al (2007) reported the egg stage lasted for 2.8 days and the percentage hatchability was 91.5 percent. The larvae passed through five instars and occupied an average duration of 11.2 days when reared on teak foliage under house conditions. The pupation took place among the dry fallen leaves on the ground and the average pupal period was 5.4 days. The reddish-brown moths that emerged had a short life span, e.g. 5.06 days in the case of females and 3.6 days in case of males, an average number of 205 ova, (133 to 294). The sex ratio favored the females (1:2.1). These details indicate the possibility of 15 annual broods.

Researchers have found that heavy infestation by ***H. puera*** and other leaf-feeding lepidoptera pest, usually at the upper areas of the trees, significantly reduces the growth in girth of the Teak trees. Recent (2022) news reports (*Los Angeles Times*) indicate that deforestation led to the loss of nearly 29,000 square miles of forest in the Republic of the Union of Myanmar (Burma) between 1990 and 2010, amounting to 19% of the nation's forest cover, especially

involving Teak. Eighty-two shipments of teak from Myanmar used for shipbuilding, outdoor decking and furniture were exported last year (2021), despite a government ban on exportation of Teak logs since 2014. One source in Myanmar (*Justice for Myanmar*) stated half the 1,725 tons of teak exported to the U.S. last year after the recent military coup in Myanmar, was purchased by one recipient, East Teak Fine Hardwoods in Donalds, S.C.

Cibrián-Llanderal et al (2015) reported that because of its commercial value, cultivation of teak has greatly increased in Mexico. As of 2015, almost 20,000 ha (49,400 acres) are planted with Teak plantations especially in the southeastern Mexican states of Campeche and Tabasco. These authors state ***H. puera*** is rapidly spreading in the teak plantations of these two states in recent years.

As with the thousands of other newly reported species for Louisiana we have documented in scientific literature over the past half century, these and other captures are part of the master entomological research collections of the authors.

More recently (Minno and Poor, 2016) reported in the SLNews, a detailed list of hostplants of ***H. puera*** in Florida.

The authors thank Richard Brown, Rick Kergosien, Victoria Moseley Bayless and Ricky Patterson for records and other helpful information.

**Abita Entomological Study Site*: sec.24,T6S,R12E, 4.2 miles northeast of Abita Springs, St. Tammany Parish, Louisiana USA.

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EDITOR'S NOTE: Images related to the monarch butterfly (*Danaus plexippus*) used in this issue as accessories ("fillers" or "spacers") at the end of feature stories, are attributed to Gary Noel Ross (Figs. 1-2 and other Figs. with no numbers).

Furthermore, all images depicting activities "offshore" (Figs. 3-12) were taken on UNOCAL West Cameron (WC)-280, a gas production platform located in the Gulf of Mexico, 72 miles south of Cameron, LA, during the monarch's trans-Gulf fall migration to the highlands of central Mexico. Original photographs were taken with a Cannon AE-1 35 mm SLR camera loaded with Kodachrome 64 (slide) film; a SUNPAK Auto 622 pro-system with a Quantum Turbo Battery supplied supplemental flash. The slides were recently digitized on a Nikon Super Coolscan 5000 ED.

Fig. 1. A pair of monarchs mating in a lichen-encrusted tree limb. Peveto Woods Bird & Butterfly Sanctuary (Baton Rouge Audubon Society). Johnson Bayou, Cameron Parish, LA. April 1991.

Fig. 2. Monarch nectaring on rough blazing star (*Liatris aspera*), during fall migration. Mt. Magazine, Logan Co., AR. August 1997.

Fig. 3. Two crew members of UNOCAL WC-280 using a make-shift net (pipe, wire, plastic) to assist with collecting trans-Gulf migrating monarchs for tagging. October 1991.

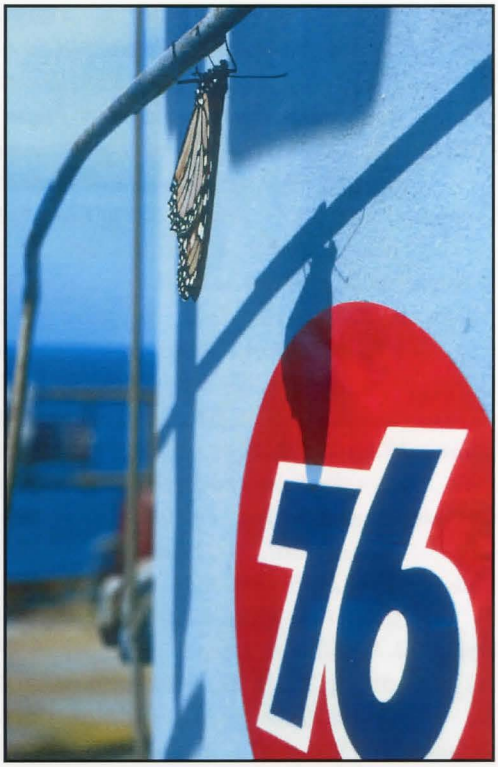

Fig. 4. Monarch resting offshore on the UNOCAL ("76") company's WC-280 gas-production platform. October 1991.

(Continuing series of images depicting activities "offshore" are on pages 40 and 58)

MONARCH JOINT VENTURE

Partnering to conserve the monarch butterfly migration

HOPE & GRATITUDE AT PACIFIC GROVE: NOTES FROM A WESTERN MONARCH COUNT

BY

CANDY SARIKONDA

Zero. That's how many monarchs were counted at Pacific Grove Monarch Butterfly Sanctuary in 2020, a longtime favorite overwintering site for monarchs spending the winter along the California coastline.

During the 2020 Western Monarch Thanksgiving Count, nearly 100 volunteers surveyed 246 overwintering sites along coastal California, to document the number of monarch butterflies spending the winter at each location. Shockingly, only a total of 1,914 monarchs were counted at all sites in the state. This represented a 99.9% decline in the population since the 1980s, and sparked fears that the western monarch population may have finally reached extinction threshold.

But to everyone's great relief, this year's 2021 Thanksgiving Count provided welcome news. While official results are still being tallied, coordinators reported over 200,000 monarchs overwintering in California this year. Still far from historic levels, the monarch numbers were better this year and provided renewed hope.

Friends from California contacted me, excited to report the good news. Pacific Grove Monarch Butterfly sanctuary was hosting 12,364 butterflies on November 26, 2021! Would I be visiting from Ohio, they asked? Taking every pandemic precaution I could, my family and I made the journey to Pacific Grove, and joined my friends on a monarch count.

The Western Monarch Thanksgiving Count has been done every year since 1997. It takes place during the three-week period centered around Thanksgiving and is coordinated by the Xerces Society and Mia Monroe. At Pacific Grove Monarch Butterfly Sanctuary (PGMBS), the Pacific Grove Museum of Natural History and longtime volunteers also conduct a weekly count of the monarchs in the sanctuary from October to February.

My son Daven and I joined the counting team at PGMBS on December 28th, to photodocument the monarch clusters, noting which trees the monarchs were utilizing and their location in the grove. The monarchs' preferred trees are identified with tree markers, and this year it was tree #28 in the center of the grove that proved to be their favorite with the colder weather. Like previous years, when the monarchs first arrived to the grove, they clustered on the Eucalyptus trees on the southern perimeter of the grove. But just prior to the first weather event, they moved to the center of the grove, where they haven't been in approximately 5-6 years.

The center of the grove has suffered tree loss in recent years due to disease and drought, and some of the trees that the monarchs historically roosted in have perished. California naturalist Stephanie Turcotte-Edenholm, a longtime educator, author and docent for the museum, reported that the monarchs were now clustering in tree #28, affectionately known as the "Charlie Brown tree," a malnourished-looking Monterey Pine tree with barely anything on its remaining branches but lace lichen. Turcotte-Edenholm reported, "It has been the hardest tree to count because the radial branches all have had some degree of monarch clusters on them. This is the tree that is also hazardous for them because with any kind of wind gusts, the chandeliers (of monarchs) have been breaking apart. We have found strands of lace lichen on the ground with live monarchs woven tightly in between. Last week, when we counted, we freed the ones that we found like that so that they had the opportunity to dry their wings and survive."

I stayed in a nearby hotel for 10 days before doing the count. I noted it has been a wet winter in Pacific Grove this year. While the area only received 40% of its typical rainfall last season with just 1.4" of rain from October 1, 2020 to January 3, 2021, this year the area has already experienced three atmospheric river events and approximately 9 inches of rainfall. It was indeed the coldest and rainiest visit I have ever had to the area, with rain nearly every day and temperatures in the 40s-50sF. I listened a few nights to strong winds and pounding rain, wondering how the monarchs would weather the storms.

The monarchs had been concentrated in about five Monterey pines and cypress trees this season, moving between the trees, forming and reforming clusters depending on what was happening with the weather. Strong winds and rain in the days just prior to the count led some monarchs to shift from the Charlie Brown tree to adjacent pines, forming larger clusters. But many monarchs had also chosen to stay in this struggling tree, finding the surrounding windbreak provided by other nearby Monterey pine and cypress trees to be sufficient.

We began our count on Dec 28th at sunrise, by surveying which trees had monarchs, and then counting the monarchs on each occupied tree. The largest number of monarchs were in the Charlie Brown tree, and it took the team one hour to count the 5,072 monarchs in this tree alone. Turcotte-Edenholm worked with museum staff members Liese Murphree, Director of Education & Outreach, and Shannon Conner, Education Coordinator for the Watershed Guardians Program, to conduct the count. Turcotte-Edenholm, Murphree and Conner worked

together like a well-oiled machine, identifying which specific tree branch they would count, then sharing their individual counts with each other to agree on a final count for each branch. Their goal was to be within 10-15% of each other, or they recounted the monarchs on that particular branch. Without fail, the team was well within that margin. Natalie Johnston, the museum's Volunteer & Community Science Coordinator, worked to record their numbers on a datasheet, again cross-checking with Turcotte-Edenholm to maintain the accuracy of data collection. My son and I took photos of the clusters, as well as some of the 22 monarchs that were on the ground after having fallen during the storms. I was surprised, and relieved, to find far fewer monarchs on the ground than I expected.

After 2 hours, we tallied the numbers to arrive at a final count. The official count for December 28th was 10,055 monarchs, down from 11,954 on December 17th. That drop in numbers was not unexpected, as monarch numbers often fluctuate during the overwintering season before dropping near the end of the season as monarchs leave the grove. Monarchs may shift between overwintering sites, and suffer mortality from predation, storms and low fat reserves.

But the count of 10,055 monarchs was a welcome relief. I reflected on my hopes for the western monarch population. As we counted, Johnston and I talked about the restoration work taking place in the grove. The City of Pacific Grove has planted young Monterey pines to replace drought-stressed and diseased trees lost in recent years in the grove. City volunteers have been watering these young trees, and caring for the older trees in the grove. Museum researchers have been documenting the trees the monarchs have used over the years, and studies have been done to determine the tree species native to the grove. The grove is being restored as the urban forest it is, and it gives me hope. As chair of the city's tree commission in my hometown, I know the importance of an urban forest to both wildlife and people. In pandemic times, our urban forests are a place of refuge and peace. They give us hope that all is not yet lost, and life will go on.

For those of us who have been in monarch conservation for many years, the battle to save the monarchs has been long and challenging. It can even be demoralizing at times. I think of the stories shared with me by neighbors of PGMBS, who describe clouds of monarchs so thick they could barely drive down the street without hitting one. I can only imagine such a sight. I long for those days when monarchs were plentiful.

But the truth is, there is no end game in conservation. It is a never-ending journey. And we cannot lose hope.

In choirs, as one person needs a rest, others continue to sing and "hold the note." So when you are tired in your conservation efforts, you have permission to rest. Others will hold the note for you. And when you are ready, you can rejoin the group, because there is much work to do.

I thought of a recent interview I heard with Dr. Jane Goodall. She talked about the importance of hope, and not falling into apathy. "…If we all lose hope, then we fall into apathy and give up, throw up our hands and say 'Oh well. There's nothing I can do.' That would be the end of us. Hope isn't a passive thing…let's imagine we're in a really dark tunnel. And right at the end of that tunnel is a little star, shining. That's hope. But we don't just sit at our end of the tunnel, and passively hope that the star will come to us. No, we have to roll up our sleeves, crawl under, climb over, work our way around the obstacles that are in our path towards that light. So for me, hope is about taking action to move towards the goal that we all want."

I think of the hundreds of volunteers reporting to citizen science projects, participating in monarch counts, caring for monarch overwintering sites, creating habitat and educating others. Working together, not against each other. No one person can do it all. It takes collective action to make a difference. Thank you to all those who are working to preserve the western monarch migration. You have my eternal gratitude.

Resources:

Interview with Dr. Jane Goodall about Hope Jane Goodall Wants You To Remain Hopeful : 1A : NPR

Photo journey of Dec. 28, 2021 count https://www.flickr.com/photos/candy_kasey/albums/72177720295865354

Why the fluctuating western monarch count The Bounciness of Butterflies | Xerces Society

How the western monarch counts are conducted Counting Western Monarchs | The Monarch Joint Venture

The experience of a past monarch count at PGMBS in January 2017 Rain, Shine or Squirrels, Pacific Grove Counts Western Monarchs | The Monarch Joint Venture

All photographs by Candy Sarikonda (Candy is a Monarch Watch Conservation Specialist and Wild Ones Member).

The Monarch Joint Venture (MJV) is a partnership of federal and state agencies, non-governmental organizations, businesses and academic programs working together to protect the monarch migration across the United States.

The Southern Lepidopterists' Society thanks Wendy Caldwell Director of the Monarch Joint Venture organization for allowing us to reprint this article by Candy Sarikonda.

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(Link to the Candy's article on the MJV site 'Hope and Gratitude at Pacific Grove: Notes from a Western Monarch Count The Monarch Joint Venture'

(Candy Sarikonda , E-Mail: koundinya@buckeye-express.com)

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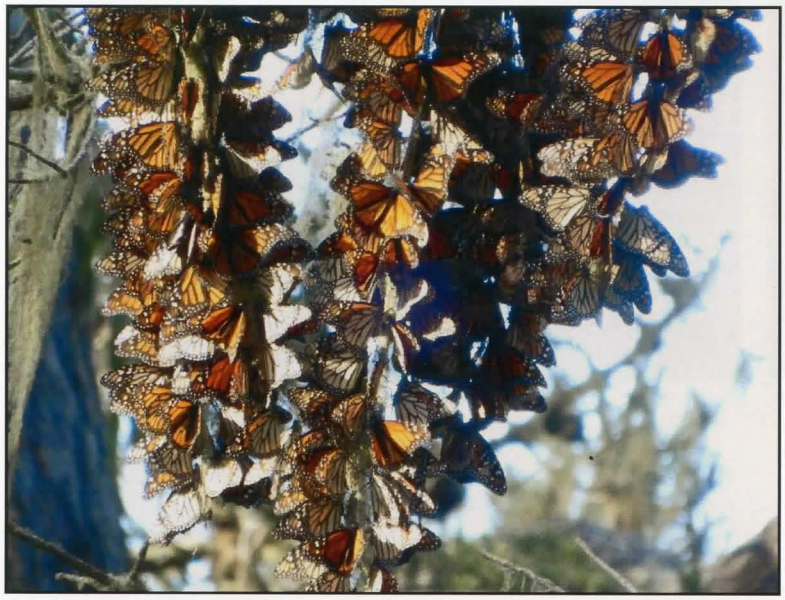
The following photos (Pages 7 - 10) were taken by Candy Sarikonda. They are not part of the previous (Monarch Joint Venture) article.

Group photo: Stephanie Turcotte-Edenholm, Liese Murphree, and Shannon Connor conduct the count. Natalie Johnston records the official data, and Daven Sarikonda photodocuments the monarchs.

The monarchs cluster tightly together on cool, rainy days. With their wings closed, they appear like dead leaves in the trees. This provides the perfect camouflage.

This struggling, large Monterey Pine tree in the center of the grove, known as the "Charlie Brown tree," has hosted many monarchs this overwintering season.

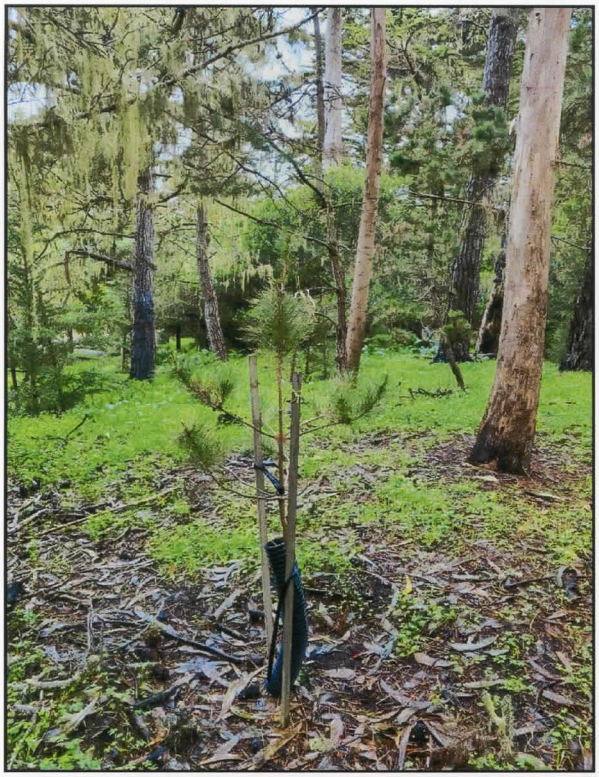
In a display of thermoregulation, a male monarch spreads its wings to soak up the early morning rays of sunlight, raising its black abdomen toward the sun as it basks.



Toward evening on a sunny day, monarchs formed clusters in the last remaining rays of sunlight. You could see their bright orange coloration as they opened their wings, flitting about as they jockeyed for a position in the cluster. Visitors could then recognize they were indeed butterflies and not dead leaves.

The monarchs gathered in trees in the center of the grove that were nearly bare of needles on their lower branches. The monarchs clung to bare branches and lace lichen, forming large clusters on the Charlie Brown tree and adjacent Monterey pines #43 and #25.

The monarchs appeared like "monarch chandeliers" as they clung to strands of lace lichen, and were at their most vulnerable during storms. But this was also a clear indication of the need to leave snags or weakened trees whenever possible, as they will still be utilized by monarchs.



A sapling Monterey pine tree planted by the city in the center of the grove. Several sapling pine trees and cypress trees have been planted, and are now watered regularly by volunteers.

Large cluster in a Monterey pine tree in the center of the grove.

(Candy Sarikonda, E-Mail: Kondinya@buckeye-express.com)

MONARCH MOVEMENT AT PACIFIC GROVE MONARCH SANCTUARY 2021 - 2022 SEASON

BY

STEPHANIE TURCOTTE-EDENHOLM

Comment by Candy Sarikonda: "This document will help grove restorationists and managers see how the monarchs are using the grove, especially in relation to weather events. And it will help them make future decisions and plans for which tree species to plant in the grove, and where they should most likely put plantings in the grove." (Candy added temperature and wind data for each count.)

Rain event 9/25/21-9/27/21; strong winds 9/26/2021 (weather data recorded at the sanctuary; Friends of the Monarchs; Dominick Sinicropi, link here https://friendsofthemonarchs.org/monarch-sanctuary-weather-page/)

Observed 1st monarchs flying along coast in Pacific Grove, September 30th, 2021

10/16/2021 1st count; 1,316 monarchs; T 61.5F, calm winds; winds 5mph ESE outside grove
All the monarchs clustered in 13 Eucalyptus trees; south and southeastern side of grove; and along fence line of hotel

10/21/2021 2,593 monarchs; T 58.6F, calm winds; winds 6mph ESE outside grove
Monarchs clustered in 14 Eucalyptus trees; south and southeastern side of grove; and along fence line of hotel

Rain event 10/25/21-10/27/21; strong winds 10/23/2021 (weather data recorded at the sanctuary)

10/29/2021 9,544 monarchs; T 57.2F, 0.9mph winds; winds 6mph SSW outside grove
First shift into the interior of sanctuary; just prior to 1st weather event of season clustered on Eucalyptus, Monterey pines, and Monterey Cypress; utilizing multiple areas in sanctuary

On approx. 10 Eucalyptus trees, but only in small clusters; 870 monarchs total

These trees would become hosts to the monarchs for the majority of the season in different configurations:

Monterey pine #28 ("Charlie Brown") first clusters; 700 monarchs
Monterey pine #43 (slightly southwest of "Charlie Brown"); 9 clusters; 3,450 monarchs
Monterey pine #25 (north of "Charlie Brown"); 3 clusters; 2,700 monarchs

A skinny Monterey Cypress DD (CPDD) and 2 Monterey Pines, north and south of CPDD, along east side perimeter of grove; east of "Charlie Brown"

Monterey Cypress DD	1 cluster;	75 monarchs
Monterey pine north of DD	2 clusters;	750 monarchs
Monterey pine south of DD	3 clusters;	375 monarchs

Rain event 11/03/21 (weather data recorded at the sanctuary)

11/6/2021 13,700 monarchs; T 53F, calm winds; winds 5mph ESE outside grove

Only on 4 Eucalyptus trees; small clusters and loners; 95 monarchs

Monterey pine #48	3 clusters;	195 monarchs
Monterey pine #49		70 monarchs
Monterey pine #51	2 clusters;	900 monarchs

(Above 3 Monterey pines are located along the visitor path, north side of rope in the southern end of grove)

Monterey pine #28 (CB)	4 clusters;	720 monarchs
Monterey pine #43	6 clusters;	6,110 monarchs
Monterey pine #25.	3 clusters;	2,750 monarchs

Monterey pine FF; east of Monterey pine #25; north east of CB; 3 clusters; 1,410 monarchs

Monterey Cypress DD	0 clusters;	0 monarchs
Monterey pine north of DD	1 clusters;	100 monarchs
Monterey pine south of DD	2 clusters;	1,170 monarchs

Rain event 11/08/21; strong winds 11/07/2021-11/08/2021 (weather data recorded at the sanctuary)

11/13/2021 13,431 monarchs; T 57F, winds calm; winds 7mph E outside grove

No monarchs on Eucalyptus trees

Monterey pine #48		50 monarchs
Monterey pine #49		0 monarchs
Monterey pine #51	2 clusters;	960 monarchs (A neighbor in the southeast corner of the sanctuary was roasting a pig in the morning. By afternoon there were no monarchs on these 3 Monterey Pines anymore.)

First signs of monarchs clustered in approx. 40 ft high Monterey Pine northwest of MP#28 (CB); also in the interior; no lower branches; just a high canopy and lace lichen; 250 monarchs

Monterey pine #28 (CB)	5 clusters;	1,950 monarchs
Monterey pine #43	6 clusters;	3,190 monarchs
Monterey pine #25	5 clusters;	4,175 monarchs
Monterey pine FF	5 clusters;	570 monarch (clusters spread out, including high up in the crown)
Monterey Cypress DD		34 monarchs
Monterey pine north of DD	1 clusters;	500 monarchs
Monterey pine south of DD	2 clusters;	1800 monarchs
Monterey pine west of MP1111 (tall)	2 clusters;	250 monarchs

Strong winds 11/17/2021 (weather data recorded at the sanctuary)

11/18/2021 12,225 monarchs; T 51F, calm winds; winds 3mph ESE outside grove

Monterey pine #48		70 monarchs
Monterey pine #49		15 monarchs
Monterey pine #51	0 clusters;	0 monarchs
Monterey pine #28 (CB)	7 clusters;	937 monarchs
Monterey pine #43.	7 clusters;	6,925 monarchs
Monterey pine #25.	5 clusters;	2,175 monarchs
Monterey pine FF	4 clusters;	625 monarchs
Monterey Cypress DD		0 monarchs
Monterey pine north of DD	1 cluster;	45 monarchs
Monterey pine south of DD	2 clusters;	1,100 monarchs
Monterey pine west of MP1111 (tall)	2 clusters;	300 monarchs

11/26/2021 12,364 monarchs; T 49F, winds 3mph SSE

Monterey pine #48		54 monarchs
Monterey pine #49		40 monarchs
Monterey pine #51	1 cluster;	210 monarchs and 6 loners
Monterey pine #28 (CB)	16 clusters;	4,031 monarchs
Monterey pine #43.	11 clusters;	2,890 monarchs
Monterey pine #25.	7 clusters;	3,400 monarchs
Monterey pine FF	0 clusters;	0 monarchs
Monterey Cypress DD		2 monarchs
Monterey pine north of DD	2 clusters;	277 monarchs
Monterey pine south of DD	2 clusters;	700 monarchs
Monterey pine west of MP1111 (tall)	0 clusters;	0 monarchs

Noteworthy because they come back to this tree, heavily, in January 2022

12/4/2021 13,608 monarchs; T 53F, calm winds; winds 3mph E outside grove

Monterey pine #48		0 monarchs
Monterey pine #49		0 monarchs
Monterey pine #51	0 clusters;	0 monarchs
Monterey pine #28 (CB)	14 clusters;	7,360 monarchs
Monterey pine #43.	10 clusters;	3,460 monarchs
Monterey pine #25.	1 cluster	75 monarchs

*Began using Cypress #31 which is just east of MP#28 (CB); 2 clusters, 650 monarchs

Monterey pine FF		70 monarchs
Monterey Cypress (skinny) next to FF on the south side		15 monarchs
Monterey pine next to FF on west side		50 monarchs
Monterey Cypress DD	2 clusters;	110 monarchs
Monterey pine north of DD	3 clusters;	293 monarchs
Monterey pine south of DD	5 clusters;	1,290 monarchs

12/11/2021 14,025 monarchs (peak); T 41.7F, calm winds

Monterey pine #48		0 monarchs
Monterey pine #49		0 monarchs
Monterey pine #51	0 clusters;	0 monarchs
Monterey pine #28 (CB)	24 clusters;	7,874 monarchs
Monterey pine #43.	8 clusters;	3,559 monarchs
Monterey pine #25.	4 clusters;	291 monarchs
Cypress #31	5 clusters;	490 monarchs
Monterey pine FF		0 monarchs
Monterey Cypress (skinny) next to FF on the south side		0 monarchs
Monterey pine next to FF on west side		0 monarchs
Monterey Cypress DD		12 monarchs
Monterey pine north of DD	3 clusters;	260 monarchs
Monterey pine south of DD	5 clusters;	1,363 monarchs

Rain event 12/12/21; strong winds 12/12/2021 (weather data recorded at the sanctuary)

12/17/2021 11,954 monarchs; count after strong weather events (wind/rain) on 12/14/21; T 44F, calm winds; winds 6mph E outside grove

Monterey pine #48		0 monarchs
Monterey pine #49		0 monarchs
Monterey pine #51	0 clusters;	3 monarchs
Monterey pine #28 (CB)	18 clusters;	5,395 monarchs
Monterey pine #43.	6 clusters;	4,070 monarchs
Monterey pine #25.	1 cluster;	65 monarchs
Cypress #31.	7 clusters;	455 monarchs
Monterey Cypress DD		0 monarchs
Monterey pine north of DD	1 cluster and dispersed;	163 monarchs
Monterey pine south of DD	5 clusters;	1,363 monarchs
Monterey pine FF		0 monarchs

Rain event 12/22/21-12/26/21; strong winds 12/22/21-12/26/21 (weather data recorded at the sanctuary)

12/28/2021 10,055 monarchs; T 44F, calm winds; winds 6mph ESE outside grove

Monterey pine #48		0 monarchs
Monterey pine #49		0 monarchs
Monterey pine #51	0 clusters;	0 monarchs
Monterey pine #28 (CB)	18 clusters;	5,072 monarchs
Monterey pine #43.	7 clusters;	3,660 monarchs
Monterey pine #25.	2 clusters;	110 monarchs
Cypress #31.	3 clusters;	329 monarchs
Monterey Cypress DD		0 monarchs
Monterey pine north of DD	4 clusters and dispersed;	257 monarchs
Monterey pine south of DD	2 clusters;	555 monarchs
Monterey pine FF		10 monarchs

1/07/2022 9,511 monarchs; T 49.6F, calm winds; winds 5mph SE outside grove

Monterey pine #48		0 monarchs
Monterey pine #49		0 monarchs
Monterey pine #51	0 clusters;	0 monarchs
Monterey pine #28 (CB)	11 clusters;	3,908 monarchs
Monterey pine #43.	9 clusters;	3,482 monarchs
Monterey pine #25.	4 clusters;	1,660 monarchs
Cypress #31.	1 cluster;	30 monarchs
Monterey Cypress DD		15 monarchs
Monterey pine north of DD		6 monarchs
Monterey pine south of DD		20 monarchs
MP west of DD (leaning tree)		70 monarchs dispersed
2 skinny Monterey Pines north of Cypress DD		30 dispersed

Monterey pine FF	0 monarchs
Monterey pine west of MP1111 (tall)	0 monarchs

1/14/2022 Another major shift from interior of sanctuary back to some of the out lying Monterey pine trees in grove, along the visitor path; some small clusters forming on Eucalyptus trees in southern end of grove; consecutive numbers of sunny and warm days; back into the tall Monterey pine at the western end of grove and northwest of Monterey Pine #28 "Charlie Brown"

Informal Notes:

Monterey pine #28 (CB)	sparse
Monterey pine #43.	sparse
Monterey pine #25.	dispersed throughout; including in canopy
Cypress #31.	none
Tall MP west of 1111	present

2 Eucalyptus on southern boundary of grove (#68, #72) present in small clusters
Monterey pines #48 and #49 had visible clusters (along visitor path)

1/22/2022 7,756 monarchs; T 50F, winds calm; continued warm temps mid to high 60's in the afternoon and sunny

Monterey pine #48	5 clusters	1,440 monarchs
Monterey pine #49	2 clusters;	686 monarchs
Monterey pine #51		5 monarchs
Monterey pine #28 (CB)	1 cluster;	56 monarchs
Monterey pine #43.	3 clusters;	94 monarchs
Monterey pine #25.	8 clusters;	3,570 monarchs

(monarchs spread across the entire south facing side of canopy and clusters found on branches on all sides lower on the tree more so than any other time during the season)

Cypress #31.	0 clusters;	0 monarchs
Tall MP west of 1111	3 clusters;	850 monarchs
Monterey pine east of 1111		200 monarchs
Monterey Cypress DD		0 monarchs
Monterey pine north of DD		0 monarchs
Monterey pine south of DD		0 monarchs
MP west of DD (leaning tree)		0 monarchs
2 skinny Monterey Pines north of Cypress DD		0 monarchs
Monterey pine FF		0 monarchs
Monterey pine east of FF		100 monarchs

Back on 2 Eucalyptus trees (#71/#72 and #68) approx. 55 monarchs; all on south facing side of trees along neighbor's fence

1/28/2022 Informal observation in sanctuary. Another shift in movement and location. Very warm temperatures 68F by afternoon. Monarchs clustered in northeastern end of sanctuary on Monterey Cypress and Monterey Pines, some trees where they had not been clustered before or in trees were they were previously only now more densely clustered on east and north facing sides.

2/04/2021 8,475 monarchs; 42F, calm winds; winds 5mph E outside grove

Monterey pine #48	0 monarchs
Monterey pine #49	0 monarchs
Monterey pine #51	0 monarchs

Monterey pine #28 (CB)		1 monarch
Monterey pine #43.		0 monarchs
Monterey pine #25.	6 clusters;	1,505 monarchs

(Monarchs still spread across the top of the south facing side of canopy and clusters found on branches on west facing and south facing sides lower down)

Cypress #31.	0 clusters;	0 monarchs
Tall MP west of 1111	0 clusters;	2 monarchs
Monterey pine east of 1111		0 monarchs

Monterey Cypress DD	0 monarchs
Monterey pine north of DD	0 monarchs
Monterey pine south of DD	0 monarchs
MP west of DD (leaning tree)	0 monarchs
2 skinny Monterey Pines north of Cypress DD	0 monarchs

Monterey pine FF		175 monarchs
Monterey pine east of FF	4 clusters;	3,030 monarchs

(This tree had an east facing branch with 1,800 monarchs on it.)

Monterey pine north of FF	7 clusters;	2,871 monarchs

(This tree's clusters were mostly east facing. One branch had 1,556 monarchs on it. Another with 500 monarchs.)

Cypress along hotel fence; northeast of Monterey Pine RR	2 clusters;	400 monarchs

(many monarchs wrapped up in the dense lace lichen on the east facing side of tree; sun hits this tree first)

Monterey Pine NN		5 monarchs
Cypress south of MPNN	5 clusters;	468 monarchs

(these trees also in northeastern area of grove)

(Stephanie Turcotte-Edenholm, E-Mail: meer367@gmail.com)

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Monarch (*Danaus plexippus*). Mature larva in suspended "J shape" preparing to shed skin for pupa. April 1991. Baton Rouge, LA. Kodachome 64 film. Gary Noel Ross.

THE MONARCH HOLOCAUST OF 2002

BY

GARY NOEL ROSS

January 12-16, 2002. The iconic overwintering sanctuaries of the monarch butterfly (*Danaus plexippus*) in the montane forests of central Mexico (states of México and Michoacán) were assaulted by a severe winter storm from the north. Temperature dropped to 18 degrees F. (-8 C.). Experts appraising the sanctuaries just days later estimated that at least 75 percent of the butterflies (200-272 million individuals) were killed. This constituted the largest die-off in recorded history (1975-present). [NOTE: On March 8-9, 2016, another super cold and super moist weather system devastated 133 acres of forest in the sanctuaries. Upwards of 6.2 million of the estimated 84 million monarchs—approximately 7.4 percent—died.]

Although monarch butterflies can tolerate cold temperatures at or near the freezing point; they can do so for only brief periods. Lethal threshold for monarchs is 29-30 degrees F. (-1.5 C). The prolonged below-normal cold coupled with rain and snow in mid January 2002 proved disastrous. Experts theorize that increasing erratic weather systems (likely due to global warming) coupled with continued illegal logging of the valuable oyamel fir (*Abies religiosa*) forest at 9,000-12,000 feet have played significant roles in what may have constituted an unprecedented catastrophe. [NOTE: Since 1975, approximately fifty percent of the fir and pine trees within the MONARCH BUTTERFLY BIOSPHERE RESERVE and a UNESCO WORLD HERITAGE SITE, have been removed due to illegal logging.]

During January 18-22, 2002, Thomas C. Emmel (1941-2018) and I conducted a small eco-tour to the two most popular overwintering sites of the monarch: El Rosario and Sierra Chincua. We arrived only two days following the extraordinary cold weather that had engulfed the colonies. Snow remained on the ground, particularly in shady areas where drifts had accumulated. And butterflies? Dead butterflies—thousands and thousands—had fallen from the trees and were now carpeting the ground. Occasionally, an

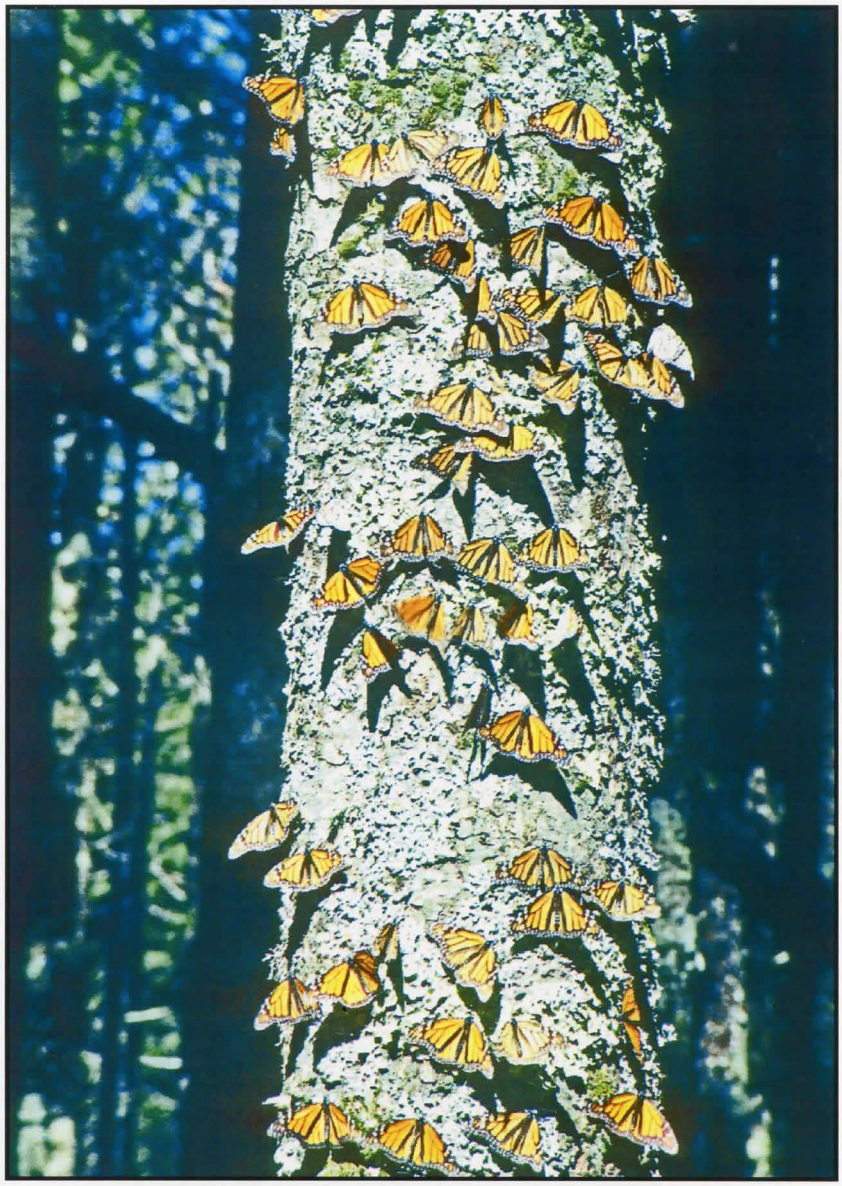
entire cluster of butterflies had fallen as their supporting branch broke because of wind and/or the weight of snow. Because we had not been forewarned about the freeze, we were shocked. In dismay, we shook our heads, shed a few tears, and mumbled a reverential prayer. Often a few live individuals were amongst the dead. They were shivering (technically termed ATP hydrolysis) in an effort to generate sufficient heat to enable the insects to crawl up onto low vegetation and into a safer micro-zone. Local sanctuary attendants had

swept the majority of the dislodged butterflies from the trails into the flanking underbrush in an attempt to restore a copasetic look while at the same time, giving those butterflies still clinging to life a chance to recover. Additionally, the attendants had installed yellow barricade tape to cordon off "no walk" areas to protect large masses of downed butterflies. As we began documenting with our cameras, we all expressed the same emotion: sacrilege. Yet, there were enclaves of forest—inner most—where clusters of monarchs continued to clung to tree branches and trunks awaiting the healing power of warmer temperatures.

During a communal break, we discussed how the current catastrophe was an excellent example of the tenuous natureof the butterfly colonies. It was obvious that the dark evergreen fir forests are pivotal in monarch conservation. But the limited fir forests are not sacrosanct. Where the forest had not been thinned by illegal logging, most butterflies had been sheltered so that they were dislodged. By contrast, sections of forest with a more open canopy had allowed cold air and wind to penetrate. The result was a massive kill. Butterflies by the thousands and millions plummeted to the ground. There, they would either die from the damp cold or perhaps even fall victim to the region's marauding nocturnal predatory mice. Furthermore, it was evident that if the fir forests were continually logged, the butterflies would be forced to seek higher altitudes where the fir trees tree were limited but nonetheless remained intact. Such relocation, however, would pose a new threat: a higher altitude would mean exposure to lower temperatures and increased wind chill. The result could be an unparalleled butterfly catastrophe of global significance. Before us in full sight—straightforward and incontrovertible—was testament for the necessity for increased forest protection.

As the day progressed, air temperature warmed to the freezing point. In those areas where sunlight penetrated, butterflies within clusters began showing signs of life: an orange hue indicating an attempt to warm (termed thermoregulation). In fact, by mid afternoon, some monarchs even engaged in brief flights—perhaps a glimmer of hope for the future. By the second day, the sky cleared to a crystalline blue, but the temperature remained painfully cold. Nonetheless, sunlight flooded the forest. By noon or so, the butterflies' thermoregulation triggered a substantial flight—brief duration, but significant. Some of us were even graced with a butterfly or two alighting on our heads or jackets.

Because my January 2002 visit documented a historic event, I am publishing a sample of my photographs (12) here for archival purposes and with the hope that they will inspire a nascent lepidopterist or two. All images were taken with a Cannon AE-1 35mm SLR camera loaded with Kodachrome 64 (slide) film; a SUNPAK Auto 622 pro-system with a QUANTUM TURBO BATTERY supplied flash. The images were recently digitized on a Nikon Super Coolscan 5000 ED.



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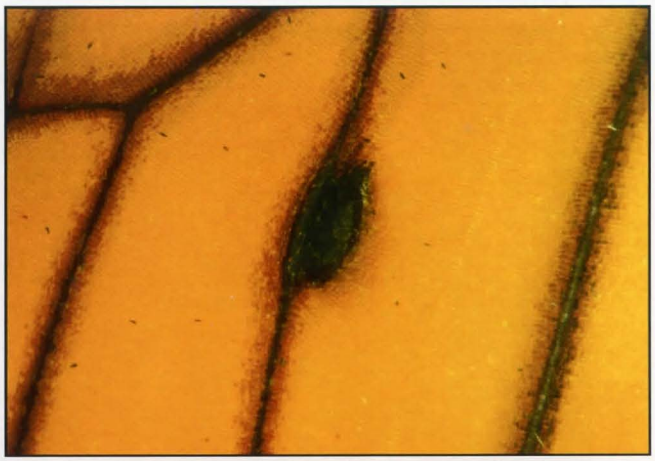
Monarch (*Danaus plexippus*). Portraits. Male (upper). Female (lower). December 1994. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross



Monarch (*Danaus plexippus*). Close-up of male scent patch (stigmata). Pouch contains scent scales (androconia) for producing sex pheromones. January 1995. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross

THE MONARCH, THE HUMAN PSYCHE, AND MEXICAN FOLK ART

BY
GARY NOEL ROSS

Throughout time and across many lands, human kind has had a history of butterfly worship. Unlike no other insect, the butterfly has had the distinction of being identified with the human soul and the afterlife. Indeed, the ancient Greeks had a dual meaning for their word *psyche*: human spirit (soul) and butterfly. This nexus has been expressed by many Native American cultures, also, especially by the pre-Columbian Aztec, Mayan, Mixtec, Toltec, and Zapotec people of Mexico and Central America. Even to this day, many indigenous Americans (including North American cultures) believe that upon death, the soul is carried to the afterlife by a butterfly. Understandably, butterflies were and continue to be considered sacred. Butterfly motifs from pre-Columbian Mexico are common in utilitarian items as well as religious rituals and esoteric artwork. Examples include: painted murals, stone carvings, textiles, paintings on deer hides and tree-bark paper, codices ("picture books"), pottery and other ceramics, clay stamps, feather work, gold ornaments, and wood carvings.

Consider, too, *Día de los Muertos* ("Day of the Dead"). This is an annual holiday that originated in Mexico but is now frequently celebrated elsewhere mainly by people of Mexican heritage. The celebration is fixed on November 1 ("All Saint's Day") and November 2 ("All Souls Day"). At this time, families welcome back the souls of their deceased relatives for a brief reunion by providing grave sites with the deceased's favorite food and drink. Additionally, social festivities within homes and in public venues take place. The auspicious occasion represents a blend of Mesoamerican mythology, European Catholic religion, and Spanish culture. And throughout the centuries, the artistic representation of the butterfly has always been integral in the celebration.

Perhaps no where is this connection between the "living and the dead" more evident than in the ancient volcanic highlands of west-central Mexico. This region is the ancestral homeland of the Mazahua, Tarascan (Purhépechans), and Otomí peoples. But in addition, the area is the winter sanctuary for the millions of monarch butterflies (*Danaus plexippus*) that depart Canada and the United States each autumn to escape the onset of winter. Within the high evergreen forests of pine and fir, the butterflies mass together in enclaves within montane evergreen forests of fir and pine on volcanic mountains between 9,000 to 12,000 feet in elevation. Locals attributed the sudden appearance of the butterflies around November 1 each year—and their typical departure in early spring—to the annual visitation of the spirits of departed relatives. For these mountain peoples, the butterfly—specifically, the monarch—was the embodiment of butterfly worship. But for the rest of the world, this remote and sacred area remained a mystery, that is, until August 1976. Then, a Canadian and his Mexican wife working under the tutelage of Fred Urquhart, a Canadian entomologist, made the cover story in *National Geographic* magazine by announcing their long-anticipated discovery. Ever since, tourists and professionals alike from around the globe have tracked to the venue.

Today, the monarch butterfly has become the moniker for Mexico's national *Dia de los Muertos,* and the interior states of México and Michoacán have become the epicenter. Celebrations have exploded become world-renowned. For the two-day celebration, commercial businesses close their doors. Regardless of age, residents dress in elaborate costumes that usually fuse motifs of human skeletons sporting monarch-styled wings. Everyone marches in joyous parades and proceed to local cemeteries where gifts are bestowed upon the graves of love ones that have been tidied for the occasion. In Mexico City, costumes can be elaborate and costly, and parades can feature major marching

bands. To accommodate the throngs of tourists, entrepreneurs and vendors market everything from food items shaped and colored like monarchs to myriad memorabilia crafted into folk art and more sophisticated paintings and photographs. In many cases, depictions feature the monarch-human connection.

I have been a collector of butterfly art and folk art for most of my professional life. During each of my four visits to the monarch's winter sanctuaries I have allotted time to collect what I consider outstanding memorabilia. In order to capitalize on the burgeoning tourist trade to the sanctuaries, a large number of local vendors usually set up make-shift shops along the trails that access the butterfly colonies. For aficionados like myself, it is quite easy to spend an hour or two perusing the diversity of handicrafts, including household items and articles of clothing.

But it wasn't until my January 2003 that I came across what remains one of my most cherished pieces. The creation is small, light weight (paper mache), inexpensive, and offered for sale in a small gift shop in the Pink Zone of Mexico City. The single figure is a mobile of a white human skeleton adorned with the bright orange and black wings of a monarch butterfly. Simplistic, yes, but dramatic and reverential, too. The figure expresses human kind's ageless infatuation with butterfly worship. Furthermore, because the figure was a mobile on a string, the figure displayed motion to symbolize heavenly flight. All in all, the folk artist, whose name remains unknown to the world, had captured the essence of the ancient *psyche*. Instinctively, I purchased the mobile (actually, there were three exact copies, and I could not resist indulging!). I am including here two photographs: one ventral (front), one dorsal (back). Specifics are below:

Dimensions: 8 inches x 7 inches
Materials: paper mache, wire, black string, paint
Origin: Mexico City, Mexico
Date of collection: January 21, 2003
Collector: Gary Noel Ross

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THOMAS CHADBOURNE EMMEL, PH.D. (May 8, 1941 - May 26, 2018)

Dr. Emmel was an iconic educator/researcher in the fields of zoology, ecology, and entomology. In 2004 he was appointed the Founding Director of the McGuire Center for Lepidoptera and Biodiversity at the Florida Museum of Natural History, University of Florida (Gainesville). Dr. Emmel died unexpectedly while pursuing professional concerns in Brazil. Photograph from El Rosario, a designated monarch overwintering site in central Mexico, January 20, 2002, by Gary Noel Ross.

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(Photos depicting activities "offshore" are continued from page 14)

Fig. 5. G.N. Ross preparing to tag a migrating monarch netted offshore. October 1991.

Fig. 6. G.N. Ross preparing wing of a migrating monarch for tagging of migrating monarch netted, offshore. October 1991.

Fig. 7. Tagged migratory monarch, offshore. October 1992.

Fig. 8. Small cluster of monarchs resting for the night offshore, on a cloth support strap. October 1992.

Fig. 9. Monarch resting on heavy equipment offshore during its trans-Gulf migration. October 1992.

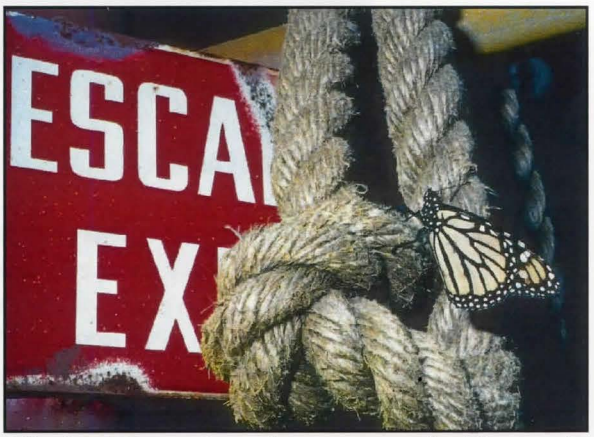


Fig. 10. Monarch resting on a rope beside an exit sign offshore during its trans-Gulf migration. October 1991.

(Photos depicting activities "offshore" are continued on page 58)

ENLIGHTENED SUGGESTIONS PREVAIL OVER CAFETERIA APPROACH TO SHED LIGHT ON THE LIFE HISTORY OF A NIGHTTIME FEEDER

BY
DELMAR CAIN

In early 2012 when I started turning on the porch lights with moths in mind at our home in Boerne, Kendall County, Texas, one of the first species that regularly visited was the Aon moth (*Aon noctuiformis* Neumoegen, 1892). According to BugGuide, the species, the only one in the genus in North America, was originally placed in the Cossidae family by Neumoegen, was moved in 1894 to the Lymantriidae family by Neumoegen and Dyar and finally placed in the Noctuidae family in 1902 by Dyar. https://bugguide.net/node/view/243385

Aon moths fly during most months of the year and have been photographed in the southwest quarter of Texas from La Grange to the Big Bend National Park according to the species information in iNaturalist. (Accessed 1/22/2022) Until now, its life history has been undocumented.

On one of his stopover visits to our home prior to 2019, David Wagner beat a caterpillar from an Ashe juniper tree on the banks of Spring Creek on our property. He

Aon female moth with loss of scales and eggs in tufts of scales on juniper twig.

barcoded the caterpillar to confirm its identity as *A. noctuiformis* but it did not feed on juniper nor a salad of other plants that he offered to it – we doubted that Ashe juniper was its host plant. Our first thought was that it was probably feeding on a grass, herb or nearby shrub. And, as he has done on several occasions in the past, DW thought that my retirement years could be more productively spent. He suggested that I try discovering the host plant of the Aon moth, in part because it is one of the more common species through the Hill Country, whose life history remained a mystery.

In September of 2019, I captured an Aon female that deposited eggs in tufts of scales from her abdomen in a plastic container. However, the eggs failed to hatch, presumably because they naturally overwinter. On November 1, 2020 I captured a gravid female and placed her in a container with a sprig of Ashe juniper. She deposited eggs from 11/4-6/2020 in the tufts of scales from her abdomen on the juniper twigs. A few eggs turned dark in mid-January, 2021 and a few hatched in early February, 2021.

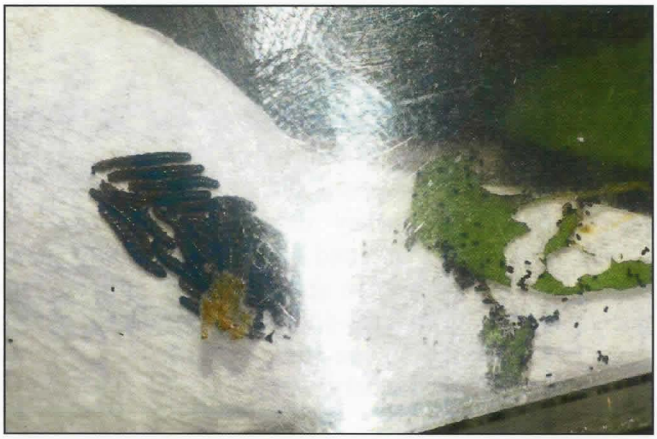
Hatched larvae unimpressed with vetch.

I placed the larvae in a bowl with small sprigs of Eastern grama grass, maidenhair fern, dewberry and Missouri violet-all plants found along bank of Spring Creek, where DW found the larva. The hatched larvae barely moved from the tufts of fuzz and expired.

A female Aon moth caught on March 5, 2021 failed to deposit eggs. But from March 9-11, 2021 I captured four females that deposited eggs which hatched within 5-

Hatched larvae feeding on Texas persimmon.

7 days of being deposited. I felt like the dog that had caught the bus it was chasing, since I had no good idea of what the larvae would eat.



Larvae in close group when not eating.

Putting each group of larvae in bowl-sized plastic containers, I tried plants from our yard. Those included dandelion, oxalis, Mexican hat, *Buddleja racemosa*, shrubby boneset, verbena, rabbit-tobacco, cut-leaf gilia, cedar sedge, annual pennyroyal, cut-leaf germander, blue-curls, Texas bedstraw, straggler daisy, nodding lettuce, pink primrose, vetch, redseed plantain, little ebony spleenwort, Carolina ponyfoot, little blue-stem, mustang grape, skeleton-leaf goldeneye, heart-leaf nettle, cypress buds, ball moss, frost weed, cedar sage and burclover.

I also tried some of DW's suggestions that he had found successful for other polyphagous species. His list included shredded carrots, sliced potatoes, dog kibbles-both adult and puppy (Eukanuba brand).

I thought I found a possible food source when I tried putting some of the larvae on the cooked rice from a grocery-purchased poke bowl. I finally determined that the reason that the larvae were staying on the rice was because they were stuck.

The larvae also did not eat the soy beans or the lettuce from the poke bowl. By March 25, 2021, the larvae from all four females had expired either individually or as one group did after forming a group silk shelter in the bottom of the container.

Feeding larva from hatched group.

From March 12-21, 2021 I captured four more females but none deposited eggs. On March 27, I caught two females but had no plan if eggs were deposited. One did not deposit eggs, but the second female deposited eggs on March 29, 2021, which hatched on April 5, 2021.

In the interim I had talked to DW, who with his student Kevin Keegan had just generated a molecular phylogeny for world Noctuidae (Keegan 2021). Their tree suggested that Aon was the sister species to *Hypocala andremona*, a persimmon feeder. DW suggested that I try Texas persimmon (*Diospyros texana*).

Larva found on Texas persimmon feeding at night.

A good sign is when a larva stops on a leaf and does not put on a spurt trying to get off the leaf and up the side of the container. The hatched larvae of the moth caught on March 27, 2021 immediately began eating when put on leaves of the Texas persimmon. It became obvious that in the early stages of growth, the larvae moved off the leaves to shelter in tissue and other dark places in a close group during the time they were not eating. By April 12, 2021 the larvae fed on the persimmon had grown so that their physical appearance was distinctive. But I was only successful at getting one of the larvae to pupate on May 3, 2021.

I talked to DW about the behavior of the larvae. He suggested that because Aon larvae had never been found on Texas persimmon, perhaps they were night feeders that moved into leaf litter by day.

On the night of April 12, 2021, I decided to check some of the Texas persimmon trees in our yard. At 11:52PM on the first tree I examined, I found Aon moth larvae feeding on a Texas persimmon leaves within fifteen feet of an outside door to our bedroom. These larvae appeared to be later instar larvae. I captured one larva which pupated on April 22, 2021. I found no larvae on the tree during daylight hours the next day.

Different sizes of larva moving down the trunk of Texas persimmon near daylight.

On the morning of April 14, 2021, I went back before sunrise to the same persimmon tree where I had found the larvae on the night of April 12. On the trunk of the tree, I found Aon larvae of different sizes (instars?) moving down the trunk and crawling into the crevices between rocks near the very bottom of the tree. I captured additional larvae on April 17 and April 28.

More larvae on rocks at the foot of the Texas persimmon.

Four of the larvae which I captured from the Texas persimmon pupated April 22-25, 2021. None have emerged. One of the larvae, which I reared from an egg hatched on April 5, 2021, pupated on May 3, 2021. It emerged on or before February 1, 2022.

Part of the life history of the Aon moth is clearer. The Aon moth does host on the leaves of Texas persimmon. Wild larvae feed on the leaves of Texas persimmon at night and move to the ground for cover before daylight.

Other questions remain:

(1) Where do the Aon females deposit their eggs? I have never seen anything like the scale-tufted enclosed eggs on a Texas persimmon. (2) Where do the larvae pupate? (3) Did I miss additional factors that are needed for a successful emergence by the pupae?

(4) How many generations are produced each year, since the moth sighting occur in most months of the year? (5) Are there other species whose life histories are still unknown because the larvae eat at night and leave the host plant during the day? (Aon would advise lepidopterists to take more nighttime treks with beating sheets?)

Perhaps someone, who desires to bump up productivity in the retirement years, can pick up the laboring oar for this and still other interesting species.

Reared larva in middle instar. Pupated on 5/3/2021

Late instar larva found on Texas persimmon.

Pupa of larva found on Texas persimmon.

Pupal casing of emerged Aon moth.

Emerged Aon moth (2/1/2022) reared from egg hatched on 4/5/2021 and pupated on 5/3/2021.

Female Aon moth in clutches of Praying Mantis—Note the tufts of scales at the tip of the abdomen.

Acknowledgement

Neither this project nor this article would have occurred without the curious and gravid brain of David Wagner, who never misses a chance to produce another teaching moment. His suggestion that I try to find the host plant of Aon started the project and his enlightened prompts of a possible host plant and possible feeding behavior made the critical difference between failure and success. Finally, he suggested that I write an article for the News, edited my draft and provided cogent comments. Thankfully he did not request that I pay tuition for this graduate supervision.

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LATE SEASON BUTTERFLYING ALONG THE GULF COAST

BY

CRAIG W. MARKS

I didn't get to do much butterflying this fall. My daughter's college soccer season had my wife and I traveling almost every weekend. In addition to attending all of her home games in Jackson MS, I attended away games in such "exotic" locations as Mobile AL, Conway AR, Marshal TX, Cleveland MS and Rome GA. Her season stretched from the third week of August, over 2 preseason games and 16 regular season games, until November 1st. She started every game, and, except for the last 90 seconds of the first half of the second preseason game, she played every minute of every game, leading her team in total minutes played. There was simply no place I would have rather been.

Typically, I don't butterfly beyond about the first weekend of November. The records of sightings I have gathered both as part of preparing my book on Louisiana's butterflies and have continued to gather since publication reflect that of the 157 species recorded in Louisiana, 107 have been reported in October. By November, the total number of species drops to 87 and the total number of species reported in December and January is only 38 and 34, respectively. I always felt the December and January numbers may have been more a reflection of a lack of searching than of the number species actually present.

A mild cold front moved through Louisiana the second week of November, but, thereafter, the weather warmed back into the mid-70's along the Gulf Coast. I really didn't get an opportunity to get into the field until the week of Thanksgiving when my family stayed several days at our place in Pass Christian, MS. On the first day we were in Pass Christian (11/20), I saw 10 species in an open field behind the complex where we were staying, including 29 Little Yellows and 27 Buckeyes (including 3 caterpillars on false foxglove) and a White Peacock.

White Peacock, Pass Christian, Mississippi (CWM)

As the weather was really pleasant and warm, I decided to do some butterfly exploring. I ended up seeing 23 species over 4 days Specifically, at the Fountaineblue Trail in Ocean Springs on 11/21, I saw 11 species, including 6 Barred Yellows, a Goatweed Leafwing and a Whirlabout. On 11/23, on my way back to Lafayette, LA, I stopped at Big Branch NWR in St. Tammany Parish and saw 13 species, including another Barred Yellow, a Queen and 49 Buckeyes.

On 11/24, I drove west to Peveto Woods in Cameron Parish. The location was full of nectar sources including hundreds of blooming lantana bushes. I saw 12 species, including a Queen, 74 Gulf Fritillaries and 26 Long-tailed Skippers.

Long-tailed Skipper, Palmetto State Park (P. Wallace)

I keep a data base of sightings around LA, tracking unusual sightings, new parish records and/or first sightings for a particular month. As a result, several butterfliers around the state keep me updated on what they have seen. Phillip Wallace sent me an e-mail advising he had visited Palmetto State Park in Vermilion Parish on 11/30, and saw 10 species, including a Southern Broken-dash and a Least Skipper. He returned the next day (12/01) and saw the same species except for the Southern Broken-dash. The Broken-dash sighting is the first of which I am aware for the month of November. The Least Skipper sighting on 12/01 was the first for the month of December.

Least Skipper, Palmetto State Park (P. Wallace)

Southern Broken-dash, Palmetto State Park (P. Wallace)

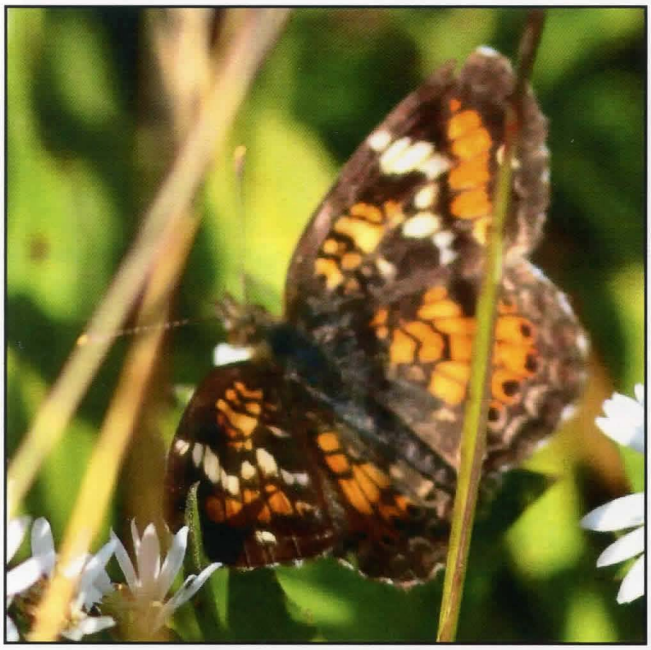
On Friday, 12/03/21, Jennifer Buchanan sent me video of a While Peacock and Zebra Longwing in a garden in Pass Christian. I decided to drive back to Big Branch NWR on Saturday, the 4th. I had seen a male Zebra Longwing at Big Branch back in September at a specific site within that NWR, so, on Saturday, the 4th, I drove back to St. Tammany Parish to see if I could find either species at that specific location. I was unsuccessful but still had a nice day, recording 14 species, including 6 Barred Yellows (first records for December), a fresh winter form Question Mark, 27 Little Yellows, 22 Gulf Fritillaries and 58 Buckeyes. The Barred Yellows were fresh, the rosa form. I also saw a male Buck Moth.

Zebra Longwings have shown up all along the eastern Louisiana and western Mississippi Gulf Coast during the fall of 2021. As a supplement to the excellent reporting by Gary Ross in his recent article about the expansion of this species' range (see the Winter 2021 issue of News of the Lepidopterists' Society, 63(4), pp 195-200), I would add the following sightings. David Muth recorded on iNaturalist seeing one at Bayou Sauvage NWR on 11/26/21. Linda Auld advised me that Trudy Campbell

reported seeing more than one in Abita Springs on farfugium on Monday, 12/06. On 12/16 in Gonzales, Mike Scott posted a picture on Facebook of one in his garden on a Mexican sunflower. There is a report from NO City Park on 12/17 and at LaCombe on 12/12, both on iNaturalist. There are additional reports on iNaturalist, these at Mandeville on 12/23 and 12/24 (the 23rd sighting was in the area of Northlake Nature Center). Charlotte Seidenberg reported one in her garden in Covington on portulaca blossoms on 12/25. Also on iNaturalist, Paula Flynn posted a picture of one in Mandeville on 12/26. On Facebook, Meredith Campbell had a picture of a Zebra on salvia on 12/29/21 in Mandeville. Jennifer Buchman advised there still were Zebra caterpillars in a garden in Pass Christian on 1/28/2022.

Although not quite as prevalent as Zebras, White Peacocks have shown up in several places in December. On 12/04/21, Phillip Wallace submitted photos from Willow Island in Cameron Parish. David Muth reported seeing this species (with a picture) at Bayou Sauvage NWR on 12/12/21, a known location for this species but the first sighting there in several years. Muth reported seeing another one on Grand Isle during the CBC on 12/22/21. Grand Isle is a known location of another White Peacock colony, but his report was the first sighting there of which I am aware since this year's devastating hurricanes.

Phillip Wallace's visit to Cameron Parish (with Brad Moon) on 12/04 yielded 18 species, including a Southern Skipperling, another Least Skipper and a Phaon Crescent (the first sighting in December for that species).



Phaon Crescent, Cameron Parish (P. Wallace)

Southern Skipperling, Cameron Parish (P. Wallace)

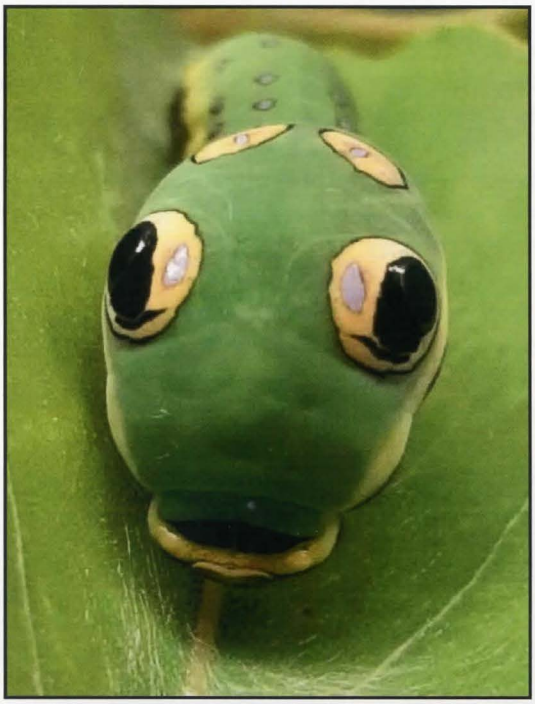
Linda Auld, New Orleans' BugLady, advised that on 12/02 in Orleans Parish at the Big Lake Native Plant Garden in City Park, she had "rescued" a tiny spicebush swallowtail caterpillar on a small camphor tree. She further advised that on 12/12, she had found several Variegated Fritillary caterpillars on pansies at the Sunrise Trading Co. in Kenner. She rescued them as well. Then, on 12/13/21, Phillip Wallace sent a message that he had seen a Giant Swallowtail in Abbeville in Vermilion Parish, the first record of which I am aware for that species in the month of December.

My next chance to get into the field was on Friday, 12/17. My office shut down early that day and with the temperatures in the upper 70's I spent a couple of hours walking around at Rip Van Winkle Gardens and Rip's Rookery at Jefferson Island in Iberia Parish. There were a lot of flowers still in bloom and eleven species of butterflies, including a fresh Brazilian Skipper (first December record), 25 Longtailed Skippers, 6 Least Skippers and 56 Ocola Skippers.

A Dorantes Longtail was seen in Jefferson Parish at Marrero on 12/24/21, reported to Linda Auld (who then passed the information on to me) by James Beck based on two separate sightings in his yard. That sighting was a new parish record as well as the first record for the month of December.

There was a light frost in Lafayette on 12/22, but the weather warmed quickly. It was up to 80 degrees by the 25th, and I had a Monarch and Long-Tailed Skipper in my yard Christmas Day. I drove down to Bayou Tech NWR in Franklin Parish (advertised as the "Cajun

Coast") on the 26th on the assumption that the frost hadn't gotten that far south. I visited the area under the big bridge, the North Bend area and where the boardwalk is located and found there was not much in bloom anywhere.



Spicebush Swallowtail, Orleans Parish (L. Auld)

Ocola Skipper, Palmetto State Park (P. Wallace)

All the butterflies I saw were fresh except one of the Long-tailed Skippers. I walked the area where Ap Browns and Dukes Skippers fly during their regular seasons, but nothing was on the wing. Most, but not all, of the grass and sedge which are the suspected larval food plants was brown and dried. I also walked the area under the bridge where Broad-winged Skippers are regularly seen. The tall cut grass was still green, but no Broad-wings. I ended up seeing only eight species including 8 Cloudless Sulphurs, definitely the most regularly seen butterfly during late November and December of 2021. Specifically, Cloudless Sulphurs were recorded 11 times during that time frame with a high count of 11 at Peveto Woods on 11/24.

Also seen on a regular basis were Monarchs, reported 9 times, with as many as 3 seen several times. Gulf Fritillaries were reported 11 times. Long-tailed Skippers were reported 10 times, and Buckeyes 9 times. Ocola Skippers were also reported 9 times.

On 12/27/21, Kerry Byrne posted on Facebook a picture of a male Black Swallowtail in Houma (Terrebonne Parish). It was nectaring at clover. The sighting is the first record for that species in the month of December.

With a significant cold front approaching Louisiana, scheduled to arrive over the New Year's weekend, I made a run down to Peveto Woods on the last day of 2021 to see what might still be flying. I found that all of the lantana previously blooming in such profusion was spent, no lantana blossoms at all. There were still some flowers, mostly out in the open, sunny areas, but the butterflies were not in the numbers as they were the last time I was there. I walked the trails from 11:30 to 1:30. A woodcock jumped up in front of me near the water-drip, and there was a Harrier hunting over the field on the eastern side of the woods. I only saw 10 species, but those seen included a fresh, large female Giant Swallowtail (the second December record for that species, both this month), a very fresh Dainty Sulphur with dark green ventral wings, a large Red Admiral and a dwarf Gulf Fritillary (possibly a result of developing during a time of the year when the days are the shortest).

That same day, Brad Moon visited Fontainebleu State Park and NorthLake Nature Center in St. Tammany Parish, looking for Zebra Longwings. He described the weather as hot (low 80s), very humid, and partly to mostly sunny. He indicated there were very few flowers because both places had mowed thoroughly. He didn't find any Zebras but did record 11 species, including a Variegated Fritillary, a Sleepy Orange and 2 Great Southern Whites (which constitute the first records for that species in the month of December).

I have not been in the field since the onset of the New Year as the weekends have been what I would describe

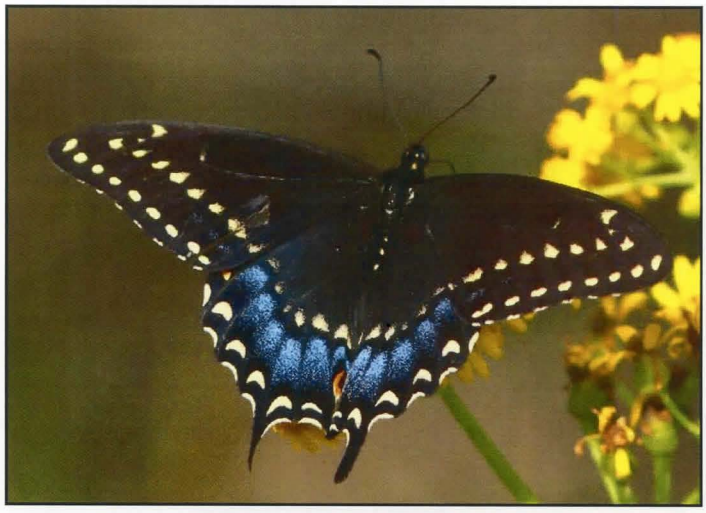
as "typical Louisiana winter weather" with overcast skies, wind and temperatures ranging from the upper 40's to the low 60's. There have been some sunny, warmer days during the work week with temperatures reaching into the 70's. Rosemary Seidler was in the field the day after New Year and she reported seeing Ocola Skippers, a Little Yellow and a Long-tailed Skipper in Plaquemine Parish. The Ocolas were the first records for Louisiana in January. The Long-tailed Skipper sighting was the second January record. On 1/14, I saw a Gulf Fritillary and a Monarch in my yard.

Giant Swallowtail, Peveto Woods (CWM)

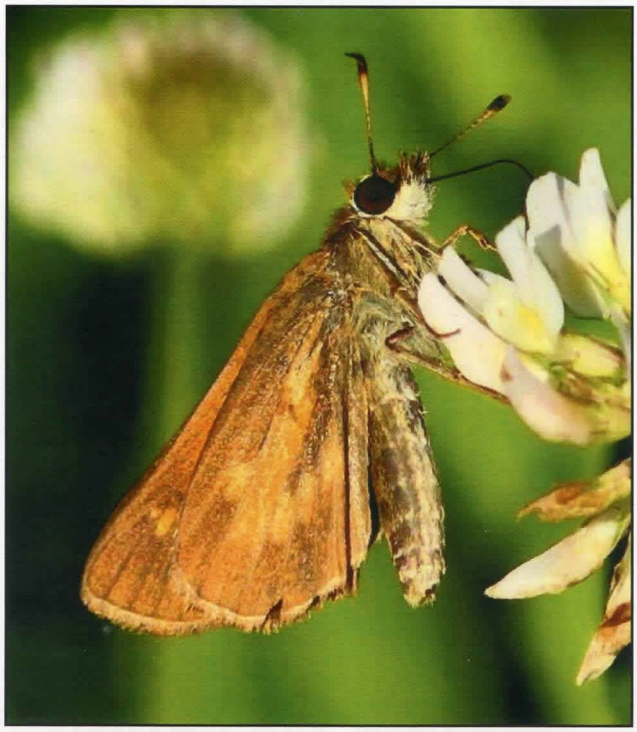
Dwarf Gulf Fritillary, Peveto Woods (CWM)

Phillip Wallace and Brad Moon continued to survey Vermilion Parish. To their credit, they produced some new records for the month of January. On 1/09/22, Phillip reported seeing two Gray Hairstreaks on Live Oak Road south of Abbeville in Vermilion Parish (with pictures), the first report for that species in January. He also reported three Black Swallowtails, an Ocola and a Long-tailed Skipper. Temps were reported to be in the low 80's. He recorded 2 more Gray Hairstreaks on 1/14 at the same location along with a Broad-winged Skipper and a Question Mark. The Broad-winged sighting was the first for the month of January.

About mid-January, an extended cold-front moved across the Gulf Coast region. Nighttime temperatures reached below freezing several nights with associated hard frost. The St Augustine grass in my yard finally turned from green to brown, and the butterfly sightings significantly slowed. Since that freeze, the only butterfly I have seen was a lonely Cloudless Sulphur on 1/26. Brad Moon advised me of a sighting/picture on iNaturalist of a Great Purple Hairstreak on 1/18 in south Baton Rouge. Surprisingly, that was not the first report for that species in January.



Black Swallowtail, Abbeville (P. Wallace)



Broad- winged Skipper, Abbeville (P. Wallace)

From November 20 through January 18, 2022, 41 different species were recorded/reported through various sources. These sightings generated one new record for November (now 88 species), 8 new records for December (46 species for that month) and 3 new records for January (37 species for the month). Those sightings included:

Black Swallowtail (2 reports)
Giant Swallowtails (2 reports)
Spicebush Swallowtail (1 report, a caterpillar)
Great Southern White (1 report, 2 seen)
Orange Sulphur (1 report, 1 seen)
Cloudless Sulphurs (multiple reports)
Sleepy Oranges (4 reports)
Little Yellow (multiple reports)
Barred Yellows (3 reports)
Dainty Sulphur (1 report)
Great Purple Hairstreak (1 report)
Red-banded Hairstreak (1 report, 4 seen)
Gray Hairstreak (2 reports)
Snouts (2 reports)
Monarchs (multiple reports)
Queens (2 reports)
Gulf Fritillaries (multiple reports)
Variegated Fritillaries (2 reports, one adult, and several caterpillars)
Zebra Longwings (multiple reports)
Phaon Crescents (2 reports)
Pearl Crescents (multiple reports)
Common Buckeyes (multiple reports)
White Peacocks (5 reports)
Question Mark (2 report)
Red Admiral (2 reports)
Goatweed Leafwing (1 report)
Carolina Satyrs (4 reports)
Longtailed Skipper (multiple reports)
Dorantes Longtail (1 report)
Tropical Checkered-skipper (multiple reports)
Common Checkered-skipper (1 report)
Swarthy Skipper (1 report)
Clouded Skippers (3 reports)
Least Skipper (4 reports)
Southern Skipperling (1 report)
Fiery Skippers (multiple reports)
Whirlabout (1 report)
Broad-winged Skipper (1 report)
Dun Skipper (1 report)
Brazilian Skipper (1 report)
Ocola skippers (multiple reports)

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

DECEMBER RECORD FOR *LACTURA PUPULA* (LACTURIDAE)

BY

LAWRENCE J. HRIBAR

Lacturidae, or Tropical Burnet Moths, as the name implies, are found in tropical and subtropical regions of the world. In North and Central America, adults have white or gray forewings marked with rows of black or red spots and pinkish red hindwings (Matson and Wagner 2017). *Lactura pupula* (Hübner) is one of the more easily recognized North American species in the family due to the black scales along the veins of the forewing and the reddish-orange color of the vertex of the head (Matson et al. 2019). Adults, last instar larvae, and eggs have been described and photographed (Peterson 1967, Matson et al. 2019). The larvae are leaf skeletonizers. Adults are nocturnal and possibly crepuscular (Heppner 2008). The taxonomic history of this family of moths is interesting and they were moved from family to family until finally being given their own family status (Heppner 1995, 1997; Matson et al. 2019).

***Lactura pupula* (Lacturidae)**

Lactura pupula is known from all Gulf Coast states, viz., Alabama, Florida, Louisiana, Mississippi, and Texas; the inland states of Arkansas, Illinois, Kentucky, Missouri, Nebraska, Oklahoma, and Tennessee; and the Atlantic Coast states of Georgia and South Carolina (Heppner 2003, Matson et al. 2019). Habitat is described as, "woodlands, thickets, scrublands, back dune and coastal strand communities, and along forest edges" (Matson et al. 2019). *Lactula pupula* is expanding its range westward (Matson et al. 2019).

The flight period of *L. pupula* in Georgia and Florida, is known to be January to November, with peaks in March, late April, and May (Heppner 2003, Matson et al. 2019). On 8 December 2021, three adult specimens were collected in a light trap set on Long Point Key in the City of Marathon, Monroe County Florida (Fig. 1). With this record, the flight period can now be said to be year-round.

Heppner (2003) listed the following host plants for *L. pupula* (all Sapotaceae): Saffron Plum, *Sideroxylon celastrinum* (Kunth) T.D. Penn.; Tough Bully, *Sideroxylon tenax* L.; Gum Bully, *Sideroxylon lanuginosum* Michx. Plants in the genus *Sideroxylon* are known as bully; they are also called bumelias because most of these plant species were formerly the genus *Bumelia* (Corogin 2018). They were placed into the genus *Sideroxylon* after the morphological characters used to distinguish *Bumelia* were found to be unreliable (Pennington 1990, 1991). Tough Bully, *Sideroxylon tenax* L. occurs in Miami-Dade County but not in the Florida Keys (Wunderlin et al. 2021). Gum Bully, *Sideroxylon lanuginosum* Michx., is found in peninsular Florida north of Lake Okeechobee (Gilman and Watson 2006, Wunderlin et al. 2021). Only saffron plum occurs in the Florida Keys and is known from Key West, Summerland Key, Little Torch Key, and Big Pine Key (Dickson et al. 1953, Long 1970, Wunderlin et al. 2021). The online herbarium records of the Smithsonian Institution (https://collections.nmnh.si.edu/search/botany/?qn=sideroxylon+celastrinum) contain vouchered specimens from Bahia Honda, Crawl, and Upper Matecumbe Keys as well. Although there do not appear to be any vouchered specimens of saffron plum from Long Point Key in herbaria, it is likely that the tree does occur on this island. A large part of Long Point Key is within Curry Hammock State Park, saffron plum is found in Curry Hammock State Park, and there is suitable habitat for saffron plum on Long Point Key (State of Florida 2016). Finally, Little (1978) depicts the range of saffron plum as encompassing the entire Florida Keys.

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(Lawrence J. Hribar, E-mail: lhribar@keysmosquito.org)

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Newly formed pupa (chrysalis). Larval skin still attached. April 1991. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross.

JUST ONE LITTLE METALMARK, PLEASE!

BY
SCOTT D. ANDERSON

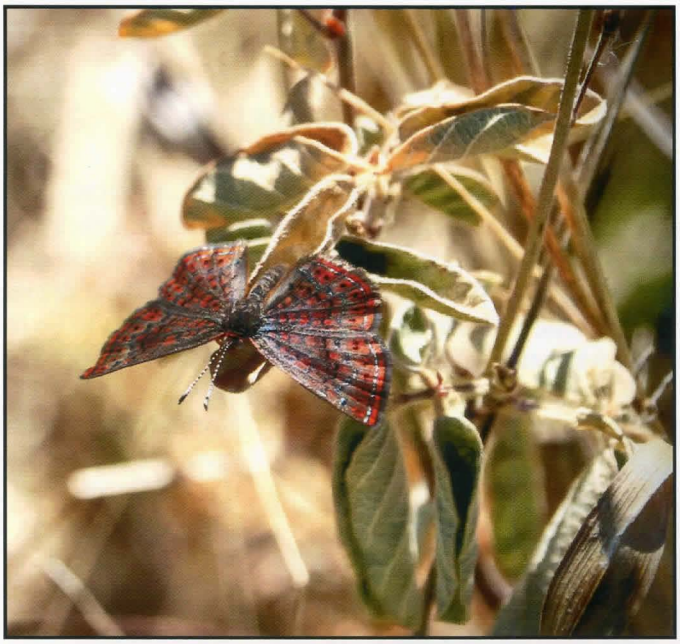
The winter temperatures in southwest Florida are typically mild and I expect no sympathy from those north of here when I say we just had 2 nights in a row at 35 degrees. However, while not even a freeze, hard or otherwise, it was pretty cold for these parts. It was so cold that I wondered if only a few days later, I would find many butterflies. I knew the numbers would be somewhat suppressed but I didn't know to what degree. Boots on and ready to go, I headed for a usual spot, Scherer Thaxton Preserve. If there were butterflies to be found, that was as tried and true a spot as any. After all, the high was headed for 81 and despite the wind, it was sunny.

Normally, at Scherer Thaxton, I will find 15 - 20 species of butterflies throughout most of the year, if not a few more. Today, given the circumstances, I set a target, one Little Metalmark (*Calephelis virginiensis*). That's all I wanted to find. Everything else was a bonus – just let me find one Little Metalmark, please.

The early going was rough. The wind was from the south and stronger than I anticipated. My first find kicked up out of the grass and blew away before I could identify it, one of those days. A Gulf Fritillary appeared, a Phaon Crescent, a Red-banded Hairstreak, all standards for this area. The numbers were low and the few butterflies spotted were far apart. The challenge I anticipated was real; I wasn't going to find much.

After a few Barred Yellows appeared and more of the same mentioned above, in habitat where they are usually found, the slightest movement occurred to my left barely enough to notice. One Little Metalmark, two Little Metalmarks, then a mating pair of Little Metalmarks, a Ceraunus Blue and yet another Little Metalmark and I was well past my goal. After a Black Swallowtail flew past and a pair of Pearl Crescents showed their colors, more Metalmarks for 8 in all. Surprisingly, my target butterfly happened to be the most prolific butterfly on what proved to be a challenging but worthwhile day.

Some days are not meant to find butterflies in the hundreds but the small numbers still can be rewarding when you set a goal and achieve it. My real goal was to go for a walk on a beautiful day. That was easily accomplished.



(Scott Anderson, E-Mail: scottanderson53@gmal.com)

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Monarch (*Danaus plexippus*). Pupa (chrysalis). 1991. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross.

SEASONALITY AND DETAILED DESCRIPTIONS OF *PLATPHALONIDIA MAGDALENAE* (TORTRICIDAE, TORTRICINAE, EULIINI, COCHYLINA) IN NW LOUISIANA

BY

ROYAL TYLER AND MICHAEL SABOURIN

Introduction

This paper is documentation of the occurrence and identifying characteristics of *Platphalonidia magdalenae* (Metzler and Albu) in Northwest Louisiana. This species has formerly been misidentified as several other similar species so this paper attempts to help clarify naming and identifying characteristics.

Figs. 1A and 1B. *Platphalonidia magdalenae* nectaring. 3-30-2018, iNaturalist obs # 10524938. Caddo Parish, LA

Materials and Methods

Royal Tyler collected and/or photographed 47 specimens between 2018 and 2021 near UV and Mercury vapor lights. At the time the project started this species was unknown to Louisiana. Initially, collected adults came to a light setup which started as a small porch light and UV light in 2018. When it was decided that the species was potentially undescribed, further study was warranted. A switch was made to a setup consisting of a Mercury vapor lamp and UV light setup on a wooden porch so that year-round collections could be obtained regardless of weather. Approximately 39 specimens were collected using this method. The moths were photographed live, immediately collected, labeled, and placed in a freezer. They were then periodically shipped to the co-author Michael Sabourin for mounting and dissection. Roughly half the specimens were dissected. Dissection was done via a modified method of Sabourin et al. (2002). Anatomical terms follow available nomenclature. The mounted specimens remain in the research collection of Michael Sabourin at the time of publication. In the fall of 2021 several specimens were collected and shipped to Cold Spring Harbor Laboratory to be barcoded.

All specimens were recorded on iNaturalist with GPS location data, digital photographs, and time and date stamps taken from photographs. During 2020 the lights were monitored daily to make sure all adult activity during the year could be captured, no dates missed.

The primary study site is The Royal Hills farm, a 153 acre tree farm located in Caddo Parish, Louisiana. This is the NW corner of the state, not far south of Texarkana, AR. It is approximately 120 acres of upland shortleaf pine (*Pinus echinata*) and loblolly pine (*Pinus taeda*) ecosystems, with about 25 acres of creek bottoms of hardwoods and cypress. Soils are predominantly sandy to sandy loam. There is an approximately 5 acre homesite which contains upland hardwood species in addition to the native pines. Out of 47 specimens recorded, 43 were recorded here. The final 4 in 2021 were collected in neighboring Bossier Parish, along the edge of a hardwood bottom in a suburban area using similar methods.

Description of Adults

Platphalonidia magdalenae is a small whitish pink moth, fw 3.9- 5.5mm, with obscure markings. When at rest the labial palpi, vertex, notum, and most of the forewing are ground color. The forewing markings

consist of three narrow somewhat oblique buff bands; basal, median, and post median. The forewing costa tends to be a darker brownish pink and the markings are darker along the costa. The forewing fringe is of ground color with an occasional brown spot. We have included photographs of adult males and females (see Figs. 2A-2B through 4A) for comparison. They appear similar and no evidence of sexual dimorphism was seen. *P. magdalenae* genitalia were previously illustrated in Metzler and Albu (2013). The males when dissected have a deeply excised apex to the median part of transtilla. *Platphalonidia* female genitalia are 'Phalonidia' like (Brown et al., 2019). The bursa copulatrix of *Platphalonidia magdalenae* is short, ca length of 7th segment. The ostium is as wide as sterigma; the sterigma is simple, cylinder shaped, a 3rd length of and coalesced with linear ductus bursae; origin of ductus seminalis broad, along posterior half of ductus bursae; corpus bursae differentiated from ductus bursae, bulbous, and densely covered with spicules.

Biology

The host plants for this species are not known, but adults were found nectaring diurnally on *Centromadia pungens* (Asteraceae) in the Central Valley of California (Metzler and Albu 2013). The only photographs of nectaring activity in Louisiana known by the authors are Figs. 1A and 1B (iNat #10524938). The plant appears to be Texas Ragwort, *Senecio ampullaceous*. This species may be multivoltine, having been recorded on the study sites from March through October. However, 34 of the 47 individuals were recorded in the month of September, 1 in October, and 5 at the end of August. The late summer brood was by far the largest one during our study. Metzler and Albu only mentioned collections in CA during the month of May. The species is distributed from California to Florida and north to Oklahoma and Maryland.

Taxonomy/Identification

Based on morphology and barcodes, Brown et al. (2019) divided *Platphalonidia* into two species groups; *P. felix* species group and the *P. campicolana* species group. *P. magdalenae* is in the *P. felix* group along with *P. albertae* and 17 others. The majority of those species are neotropical. To date, *P. magdalenae* and *P. albertae* are the only known described species of the *P. felix* group reported from eastern United States or Canada. Metzler and Albu (2013) differentiated *P. magdalenae* from *P. albertae* by a difference in the apex of the median part of the transtilla and from *P. plicana* by the lack of dark forewing terminal line and fringe. The forewing termen is also useful in comparison with *P. albertae* which Razowski (1997) gives as "fringes creamy brown, brown scaled". Razowski (1997) included in the distribution of *P. felix* Kansas and Indiana, but we have not been able to find any available material or BIN information to support that occurrence and assume it likely a misidentification of *P. magdalenae* which was not known at that time.

Figs. 2A and 2B. *Platphalonidia magdalenae* male. 9-5-2021. iNaturalist obs # 93730227. Caddo Parish, LA

We had been aware that the Louisiana specimens resembled *P. magdalenae*, based on a review of *Platphalonidia* BOLD BINs done by S. Nanz, M. Sabourin, and A. Hunt (2021). However because of concerns about disjunct populations and cryptic species the current authors were hesitant to apply the name to Louisiana specimens. With the use of iNaturalist, BOLD, and molecular testing we were able to confirm that *P. magdalenae* is a widespread species. The distribution appears to be quite large in the US based on BOLD data for BIN AAA1128. The authors, in cooperation with Jeffry Petracca, Cold Spring Harbor Laboratory (2021, 2022), successfully harvested DNA from four specimens to include in this study. These were CWK 001 from Caddo Parish (iNat#93995638), JWJ-035 9-15-21 Bossier Parish (iNat#94930093), JWJ-036 9-15-21 Bossier Parish (iNat#94930097), and JWJ-037 9-16-21 Bossier Parish (iNat#95337347). All results are posted in GenBank.

As is consistent with most species of *Cochylina*, external appearance alone usually cannot be trusted as the sole indicator of species. A large percentage of the moths collected had some degree of wear, and many of the markings which help make the pattern distinctive are lost quickly as the moth ages. This tendency reaffirms the need for DNA or genitalic analysis for confirmation. On the Caddo Parish site which had the most collections, we feel that identification based on external appearance should be correct 90+ percent of the time. This is only after years of study of every species of *Cochylina* present on the site.

Fig. 3A. *Platphalonidia magdalenae* female. 9-18-2020. iNaturalist obs # 59963078. Caddo Parish, LA

Fig. 3B. *Platphalonidia magdalenae* female. 9-18-2020. iNaturalist obs # 59963078. Caddo Parish, LA

Fig. 4A. *Platphalonidia magdalenae* Male. 9-7-2021. Specimen number CWK-001 in BOLD BIN AAA1128. iNaturalist obs. # 93995638. Bossier Parish, LA.

Citations

Barcode of Life (BOLD), 2022. BIN AAA1128 https://v3.boldsystems.org

Brown, J.W. L. Aarvik, M. Heikkila, R. Brown, and M. Mutanen, 2019. A molecular phylogeny of Cochylina, with confirmation of its relationship to Euliina (Lepidoptera: Tortricidae). *Systematic Entomology*, 45(1): 1-15; Appendix S2.

Hunt, Aaron, 2021. Website BugGuide.net and personal communication.

iNaturalist, 2-15-22. website www.inaturalist.org/taxa/1139023-Platphalonidia-magdalenae.

Metzler, E.H., Albu, V., 2013. The Description of *Platphalonia magdalenae* (Tortricidae, Tortricinae, Euliini, Cochylina) Found Nectaring Diurnally on *Centromadia pungens* (Asteraceae) in the Central Valley of California Along with a List of Species of *Platphalonia*, *Journal of the Lepidopterists' Society*, 67: 156-160.

Nanz, Steve, 2021. website https://mothphotographersgroup.msstate.edu and pers. communication

Petracca, Jeffry, 2021-2022. Personal communication, Cold Spring Harbor Laboratory, New York. www.cshl.edu

Razowski, J., 1997. Cochylini (Lepidoptera: Tortricidae) of Canada. Acta Zool. Crac., 40(1): 107-163

Sabourin, M., W. E. Miller, E. H. Metzler, and J. T. Vargo, 2002. Revised Identities and New Species of Aethes from Midwestern North America (Tortricidae). *Journal of the Lepidopterists' Society*, 56: 216-233.

(Royal Tyler, E-Mail: whitefringetree@gmail.com)

(Images depicting activities "offshore" are continued from page 40.)

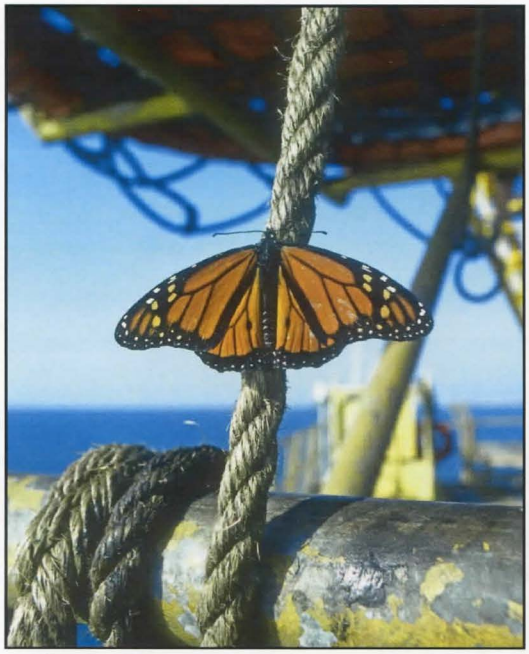

Fig. 12. Monarch resting on a rope near dusk, offshore. October 1992.

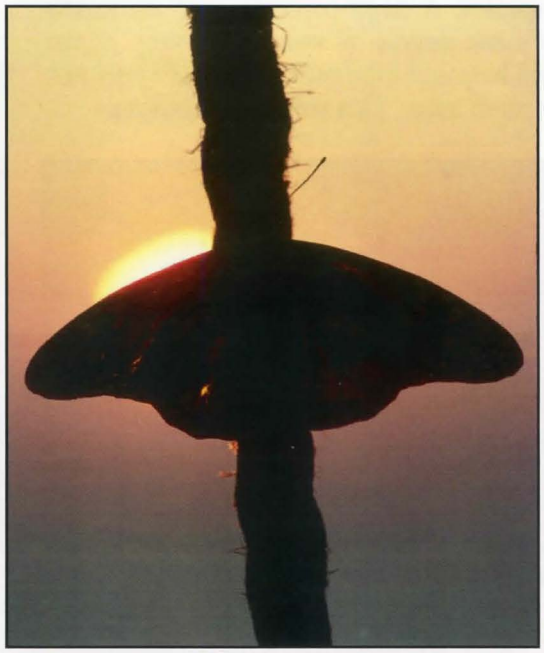

Fig. 13. Monarch resting on a rope at sunset, offshore. October 1992.

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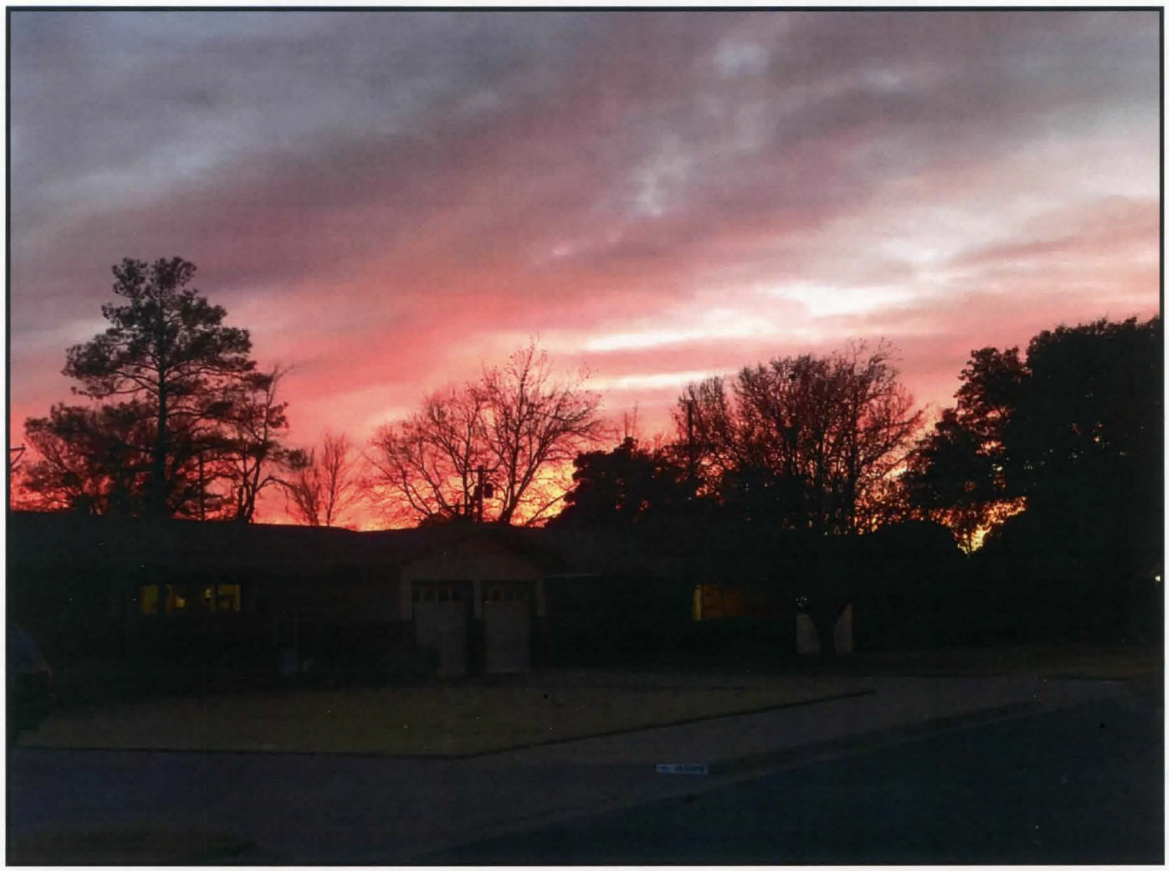


Sunset in Lubbock, Texas, December 15, 2021

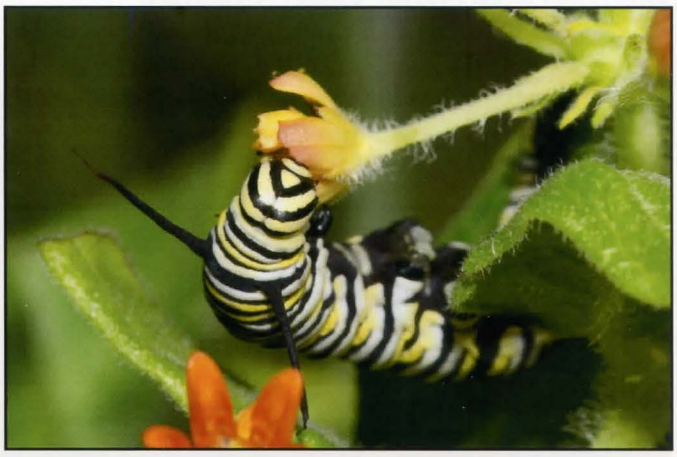
BABY LEPS
A PHOTO ESSAY
BY
BRYAN E. REYNOLDS

Here's the next installment of photo essays about lep behavior. The last three issues of the SLS News had essays about courting leps, mating leps, and then ovipositing leps. This issue showcases baby leps. Where possible, I always try to get the larval plants identified. Also, while I try to photograph an egg that has just been freshly laid, sometimes I opt to chase the female doing the ovipositing for more photos of *that* behavior. Because of this, I'm not always able to photograph the exact egg I witnessed being deposited. For all of the other immature life stages, I photograph those as I come upon them, sometimes while specifically looking for them, or sometimes they're just random encounters. I hope you enjoy the series.

Monarch, *Danaus plexippus*, egg on Green Milkweed, *Asclepias viridis*, McGee Creek Wildlife Management Area, Atoka County, Oklahoma, 30 April 2021

Monarch, *Danaus plexippus*, larva on Swamp Milkweed, *Asclepias incarnata*, Kettle Moraine State Forest, North Unit, Spruce Lake Bog, Fond du Lac County, Wisconsin, 2 July 2018

Monarch, *Danaus plexippus*, larva feeding on Green Milkweed, *Asclepias viridis*, James Collins Wildlife Management Area, Pittsburg County, Oklahoma, 13 May 2021



Monarch, *Danaus plexippus*, larva feeding on Orange Milkweed, *Asclepias tuberosa*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 May 2017

Monarch, *Danaus plexippus*, larva feeding on Orange Milkweed, *Asclepias tuberosa*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 June 2019

Monarch, *Danaus plexippus*, larva on Green Milkweed, *Asclepias viridis*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 2 May 2017

Frosted Elfin, *Callophrys irus*, caterpillar on Yellow Wild Indigo, *Baptisia sphaerocarpa*, Chickasaw National Recreation Area, Murray County, Oklahoma, 3 May 2021

Frosted Elfin, *Callophrys irus*, caterpillar on Nuttall's Wild Indigo, *Baptisia nuttalliana*, near Albion, Pushmataha County, Oklahoma, 4 May 2021

Frosted Elfin, *Callophrys irus*, caterpillar on Nuttall's Wild Indigo, *Baptisia nuttalliana*, near Whitesboro, Ouachita National Forest, Le Flore County, Oklahoma, 4 May 2021

Frosted Elfin, *Callophrys irus*, caterpillar on Yellow Wild Indigo, *Baptisia sphaerocarpa*, Chickasaw National Recreation Area, Murray County, Oklahoma, 26 April 2021

Black Swallowtail, *Papilio polyxenes*, caterpillar on Golden Alexander, *Zizia aurea*, Blue River Wildlife Management Area, Johnston County, Oklahoma, 7 June 2013

Black Swallowtail, *Papilio polyxenes*, caterpillar, Blue River Wildlife Management Area, Johnston County, Oklahoma, 7 June 2013

Black Swallowtail, *Papilio polyxenes*, caterpillar, Blue River Wildlife Management Area, Johnston County, Oklahoma, 7 June 2013

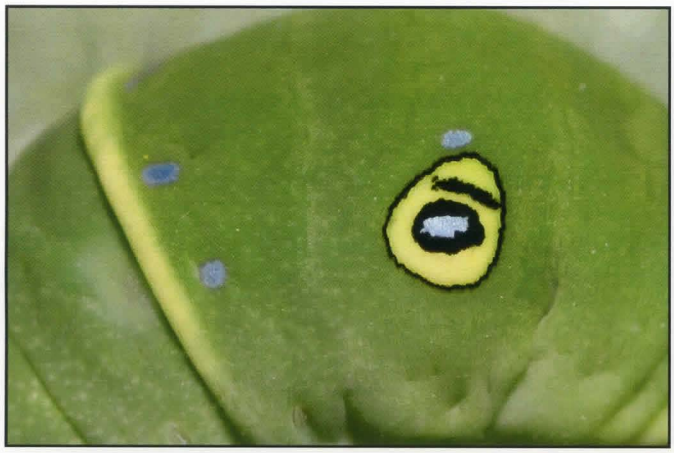
Black Swallowtail, *Papilio polyxenes*, larva on Dill, *Anethum* sp., Oklahoma State University Botanical Garden, Stillwater, Payne County, Oklahoma, 11 July 2012

Black Swallowtail, *Papilio polyxenes*, larva on Dill, *Anethum* sp., Oklahoma State University Botanical Garden, Stillwater, Payne County, Oklahoma, 11 July 2012

Black Swallowtail, *Papilio polyxenes*, caterpillar with osmeterium partially everted, Pontotoç Ridge Preserve, Pontotoc County, Oklahoma, 8 June 2013

Eastern Tiger Swallowtail, *Papilio glaucus*, egg on Wild Cherry, *Prunus* sp., J.T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma, 2 April 2007

Eastern Tiger Swallowtail, *Papilio glaucus*, caterpillar on Green Ash, *Fraxinus pennsylvanica*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 22 September 2017



Eastern Tiger Swallowtail, *Papilio glaucus*, caterpillar, false eyespot, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 22 September 2017

Eastern Tiger Swallowtail, *Papilio glaucus*, caterpillar on Green Ash, *Fraxinus pennsylvanica*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 30 September 2017

Eastern Tiger Swallowtail, *Papilio glaucus*, caterpillar on Green Ash, *Fraxinus pennsylvanica*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 September 2017

Eastern Tiger Swallowtail, *Papilio glaucus*, caterpillar on Green Ash, *Fraxinus pennsylvanica*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 9 September 2017

Gulf Fritillary, *Agraulis vanillae*, egg on Passionvine, *Passiflora* sp., Oka'Yanahli Preserve, Johnston County, Oklahoma, 23 August 2013

Gulf Fritillary, *Agraulis vanillae*, caterpillar on Passionvine, *Passiflora* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 19 July 2013

Gulf Fritillary, *Agraulis vanillae*, larva feeding on Passionvine, *Passiflora* sp., Norman, Cleveland County, Oklahoma, 16 September 2021

Gulf Fritillary, *Agraulis vanillae*, caterpillar on Passionvine, *Passiflora* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 17 July 2013

Gulf Fritillary, *Agraulis vanillae*, larva preparing to pupate, Frontera Audubon, Weslaco, Hidalgo County, Texas, 3 November 2013

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Gulf Fritillary, *Agraulis vanillae*, chrysalis, Frontera Audubon, Weslaco, Hidalgo County, Texas, 4 November 2013

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Question Mark, *Polygonia interrogationis*, freshly oviposited egg on Elm, *Ulmus* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 July 2019

Question Mark, *Polygonia interrogationis*, larva on Elm, *Ulmus* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 12 May 2012

Question Mark, *Polygonia interrogationis*, larvae on Elm, *Ulmus* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 12 May 2012

Question Mark, *Polygonia interrogationis*, pupa on Elm, *Ulmus* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 31 May 2012

Pipevine Swallowtail, *Battus philenor*, freshly deposited eggs on Pipevine, *Aristolochia* sp., Stone Road Glade Natural Area, Howard County, Arkansas, 2 June 2019

Pipevine Swallowtail, *Battus philenor*, larvae on Woolly Dutchman's Pipe, *Aristolochia tomentosa*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 12 May 2019

Pipevine Swallowtail, *Battus philenor*, larva, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 12 September 2015

Pipevine Swallowtail, Battus philenor, larva on Woolly Dutchman's Pipe, *Aristolochia tomentosa*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 11 May 2017

Pipevine Swallowtail, Battus philenor, larva on Woolly Dutchman's Pipe, *Aristolochia tomentosa*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 11 May 2017

Pipevine Swallowtail, *Battus philenor*, larva with osmeterium everted, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 12 September 2015

Gorgone Checkerspot, *Chlosyne gorgone*, gregariously feeding larvae on Sunflower, *Helianthus* sp., leaf, Blue River Wildlife Management Area, Johnston County, Oklahoma, 7 June 2013

Gorgone Checkerspot, *Chlosyne gorgone*, gregariously feeding larvae on Sunflower, *Helianthus* sp., leaf, Blue River Wildlife Management Area, Johnston County, Oklahoma, 7 June 2013

Variegated Fritillary, *Euptoieta claudia*, egg on Passionvine, *Passiflora* sp., Oka'Yanahli Preserve, Johnston County, Oklahoma, 23 August 2013

Variegated Fritillary, *Euptoieta claudia*, freshly deposited egg on Passionvine, *Passiflora* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 August 2010

Variegated Fritillary, *Euptoieta claudia*, caterpillar on Passionvine, *Passiflora* sp., Oka'Yanahli Preserve, Johnston County, Oklahoma, 3 August 2013

Variegated Fritillary, *Euptoieta claudia*, caterpillar on Passionvine, *Passiflora* sp., J.T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma, 28 May 2014

Variegated Fritillary, *Euptoieta claudia*, caterpillar on Violet, *Viola* sp., central Oklahoma, Cleveland County, Oklahoma, 7 May 2014

Variegated Fritillary, *Euptoieta claudia*, chrysalis, Wichita Mountains National Wildlife Refuge, Comanche County, Oklahoma, 23 June 2007

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Bordered Patch, *Chlosyne lacinia*, larvae feeding gregariously on sunflower, *Helianthus* sp., Albuquerque, Bernalillo County, New Mexico, 2 July 1998

Bordered Patch, *Chlosyne lacinia*, larvae gregariously feeding on Sunflower, *Helianthus* sp., Resaca De La Palma State Park, Cameron County, Texas, 31 October 2014

Bordered Patch, *Chlosyne lacinia*, larva on Annual Monsterwort, *Parthenice mollis*, Coronado National Forest, Box Canyon, Pima County, Arizona, 3 August 2018

Bordered Patch, *Chlosyne lacinia*, larva on Plateau Goldeneye, *Viguiera dentate*, Coronado National Forest, Box Canyon, Pima County, Arizona, 2 August 2018

Bordered Patch, *Chlosyne lacinia*, larva on Plateau Goldeneye, *Viguiera dentate*, Coronado National Forest, Box Canyon, Pima County, Arizona, 2 August 2018

Bordered Patch, *Chlosyne lacinia*, larva on Plateau Goldeneye, *Viguiera dentate*, Coronado National Forest, Box Canyon, Pima County, Arizona, 2 August 2018

Crimson Patch, *Chlosyne janais*, caterpillar, Frontera Audubon, Weslaco, Hidalgo County, Texas, 28 October 2014

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Crimson Patch, *Chlosyne janais*, larva on Smallflower Wrightwort, *Carlowrightia parviflora*, Frontera Audubon, Weslaco, Hidalgo County, Texas, 26 October 2014

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Crimson Patch, *Chlosyne janais*, caterpillar, Frontera Audubon, Weslaco, Hidalgo County, Texas, 28 October 2014

Crimson Patch, *Chlosyne janais*, chrysalis attached to side of building, Frontera Audubon, Weslaco, Hidalgo County, Texas, 30 October 2014

Queen, *Danaus gilippus*, freshly deposited egg on milkweed, *Asclepias* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 31 July 2010

Queen, *Danaus gilippus*, caterpillar on Tropical Milkweed, *Asclepias curassavica*, Heard Natural Science Museum & Wildlife Sanctuary, McKinney, Collin County, Texas, 29 July 2009

Northern Pearly-eye, *Lethe anthedon*, larva on Indian Woodoats, *Chasmanthium latifolium*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 June 2019

Northern Pearly-eye, *Lethe anthedon*, larva on Indian Woodoats, *Chasmanthium latifolium*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 29 June 2019

Silvery Checkerspots, *Chlosyne nycteis*, larvae feeding gregariously on Black-eyed Susan, *Rudbeckia hirta*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 22 June 2020

Silvery Checkerspots, *Chlosyne nycteis*, larvae feeding gregariously on Black-eyed Susan, *Rudbeckia hirta*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 22 June 2020

Silvery Checkerspots, *Chlosyne nycteis*, larvae feeding gregariously on Black-eyed Susan, *Rudbeckia hirta*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019

Fulvia Checkerspot, *Chlosyne fulvia*, eggs freshly deposited on Great Plains Indian-paintbrush, *Castilleja sessiliflora*, Packsaddle Wildlife Management Area, Ellis County, Oklahoma, 8 June 2021

Fulvia Checkerspot, *Chlosyne fulvia*, larva on Great Plains Indian-paintbrush, *Castilleja sessiliflora* (notice tachinid fly eggs), Packsaddle Wildlife Management Area, Ellis County, Oklahoma, 30 May 2021

Fulvia Checkerspot, *Chlosyne fulvia*, larva on Great Plains Indian-paintbrush, *Castilleja sessiliflora*, Packsaddle Wildlife Management Area, Ellis County, Oklahoma, 30 May 2021

(Bryan E. Reynolds, E-Mail: nature_photo_man@hotmail.com)

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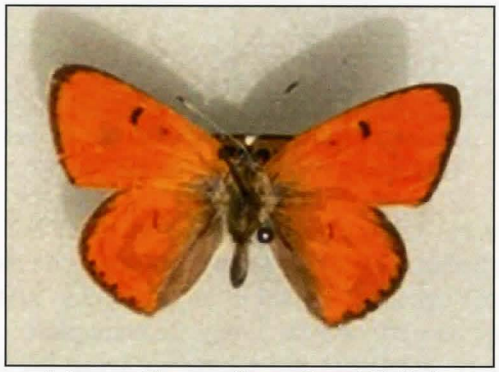
WHAT LEGACY DO WE OWE AS LEPIDOPTERISTS? (PREPARE FOR THE WORST, BECAUSE THEN IT WON'T HAPPEN)

BY

KELLY RICHERS

Over the years that I have been a collector and studier of moths, I have been asked to participate in three important collection transfers from individuals to scientific entities. All three have taught me important lessons in what to do and, more importantly, how to be prepared for that inevitable day when we cannot care for our collections any more. I would like to pass this information on using real accounts of real persons. The names have been omitted to protect the innocent.

The first collection which I curated was donated to a school system. Rumor had it that the donor was getting rid of the collection so it would not be valued in a divorce settlement, so that rather than give it to an institution as a scientific appraised entity, he donated it to a public school system to be used as an educational display. The school system contacted me to make as many displays as I could for their summe r camps. This proved to be a colorful world-wide collation, and I was able to put together three sets of ten glass topped drawers for each camp. However, in doing so, there was no backup information other than what was on the labels, so the collection was somewhat random in groupings, determined by me more toward impressing students than scientific retention of information. Only afterwards did I learn that several specimens, totally unlabeled, were the last known taken in some European countries before that species was extirpated from that country. Theoretically there were backup papers to let me know that, but in the bureaucracy of the school system, or in moving the collection around to where I was able to access it, the system lost all the backup information. The specimens were unlabeled, or did I already mention that?



A Large Copper from Great Britain, reputedly one of the last endemic ever caught, but the information is missing because the owner/collector did not put it on a label on the specimen

The second collection was of one of the most renowned collectors in all of southern California. I was involved in preparing and shipping his collection to several entities over a period of several trips to his home. Unknown to me, and unfortunately, he had neglected to protect his collection against dermestids,

Poison was not placed in container, therefore several butterflies were destroyed.

and in the Mediterranean climate of the Los Angeles area, several important boxes of specimens were totally devastated. In one noteworthy instance, of the over 150 Annaphila moths he had collected, including Paratypes and important rare species, only 15 survived (*See photo on next page for typical damaged specimens*).

Over the years, as his health declined, with no one in the household to assist him in his collection, the protections he had previously used to prevent this infestation simply stopped working as the poisons were not replaced. Although great portions of his invaluable collection were saved for institutional use, many important items were not. His voluminous notes were saves, but several key pieces of information, such as the location of slide genitalia, were not located and the genitalia of some Paratype material did not go where the specimens went.

The third collection represents the plight of amateur collectors everywhere if they do not know how to curate according to generally accepted scientific mannerisms. A museum in the state received a call

Annaphila moths, showing the loss of wings and parts. These are the few survivors from a collection where many valuable specimens, including paratypes, were lost to dermestids.

regarding donating a butterfly collection. The curator of the museum asked if the specimens were labeled, and upon being informed that they weren't declined the collection and put out an email to some of us. This seemed to be more in line with another informative school type collection for show, so I volunteered to go get the collection. The collector had collected extensively in the Utah, Idaho and California area in the early 1980's and had suffered a stroke last year. His spouse and he decided to empty the garage of the 20 homemade drawers he had accumulated.

Upon arriving at the residence, ***I noticed that the specimens were not unlabeled, but in fact each had a tiny number on the pin.*** I inquired as to whether there might be some notebooks or other papers that the collector might not have mentioned, and his spouse directed me to five volumes of information matching up to the numbers on the specimens.

For the last three months I have been working on this collection. This entails pulling the information (some incomplete) from the data sheets (some computer records on continuous forms from the 1980's and some handwritten in notebooks). Then I made labels for the specimens. Then I pull them from the 20 large drawers, match each number with a label, and group them by subfamily or genus. Then I identify the specimens. Cornell University has agreed to accept the collection, and these are being steadily sent to them, four Bioquip boxes at a time. It is my anticipation that through this process over 1200 of the 2000 butterflies may be saved scientifically for posterity.

"...specimens were not unlabeled, but in fact each had a tiny number on the pin."

This process takes a huge amount of time, but I am doing it because of some serious thinking generated by these three instances. I will try to rationalize what that thinking is so others may contemplate what preparatory steps they are taking to avoid the above circumstances.

There are three times as many people on the earth now as there were when I was born. That is staggering. The

implications for scientific exploration of natural resources are immense, and all to the detrimental side regarding habitat. Each and every one of us us, regardless of age, can point to some locale that once supported collecting and/or observation of Lepidoptera which has since been lost to building or development. This is inescapable, and habitat is being lost at an increasing rate. If I live to my expected life span, there will be five times as many people on the earth as when I was born. The depletion of natural resources will therefore continue and possible accelerate.

Therefore, it becomes incumbent on those of us who stubbornly insist on continuing to collect (such as myself) to do so in a method that supports an objective assessment of where these collected specimens will end up. This involves the following steps, in my mind:

1. Whatever you spread, label. Labels should follow accepted scientific format. One label should include state, county, location, date and collector. The second should include the scientific name and either the author of the name of a reference such as a MONA number.

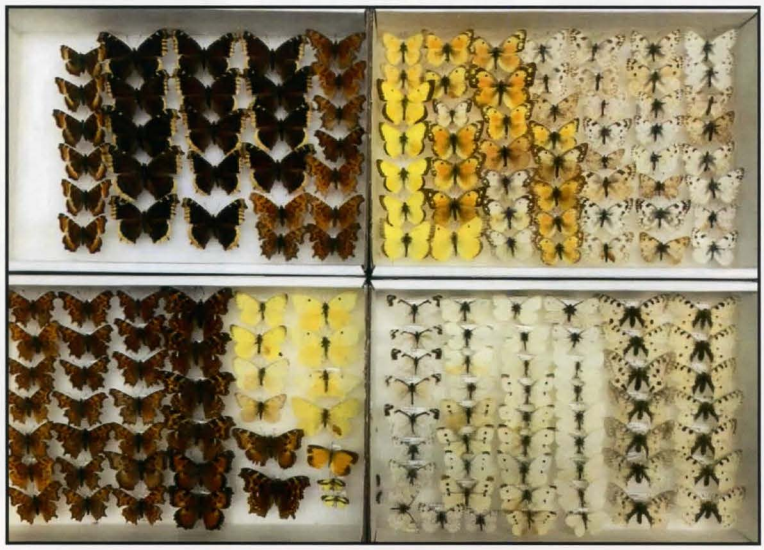
2. `Protect your specimens. Use something that seals. Cornell or Cal Academy drawers are the most practical, and some museums have used ones amateurs might access at reduced rates for those needing financial assistance. Put some kind of poison in the drawers inside a container that is not going to be able to harm the specimens but will kill those bugs that want to eat your bugs.

3. Realize that you are not going to live forever. This is, apparently, the most difficult part of any collection being saved. I know of at least four compatriots who have passed away, and three of these did not have plans properly prepared for those left to handle collections. For instance, I have a file labeled "If I Get Kilt" (after all I am a public school superintendent, so who knows?) in which I have instructions for not only all insurances and deeds, but also where my collection goes. That way my wife or daughter can dispose of my collection properly in the event a golf ball whacks me alongside my head.

4. Update your plans periodically. I recently attended the funeral of a workmate who had his mother still on all his documents to handle his estate. She predeceased him by several years, and thus no one can quickly access his insurance and other accounts.

These simple steps are needed because your collection is a valuable scientific contribution to the knowledge of Lepidoptera. It really is. One third the habitat, by extrapolation, is now available for collecting or observation compared to when I was born, and more disappears daily. Your collection may represent historical ranges that very likely may disappear soon.

I realize that this is not the usual fun article that I have been able to write, but this is a serious subject requiring serious though on the part of each and every one of us.



Saves specimens for Cornell University that would have been lost

Twelve of the twenty drawers of Lepidoptera to be potentially saved

More saved specimens now properly labeled

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

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Monarch (*Danaus plexippus*). Newly emerged butterfly and empty chrysalis. April 1991. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross.

Monarch (*Danaus plexippus*). Newly emerged female butterfly, spent chrysalis, and late pupa. June 1991. Baton Rouge, LA. Kodachrome 64 film. Gary Noel Ross.

MONARCH CITIZEN SCIENCE 2022

BY

LINDA BARBER AULD, NOLA BUGLADY AND GINNA HOFF

Christen Steele, Ph.D. candidate at Tulane University, has spent five years catching monarch butterflies in New Orleans. Holding them securely by their wings, she presses a clear sticker to their bellies and then examines what adheres to the sticker under a microscope. Her work is part of a regional citizen science research project called "Project Monarch Health" led by the Altizer Lab at the University of Georgia. The program is led by Sonia Altizer, a leading researcher on Oe *(Ophryocystis elektroscirrha)*, a parasite infection that debilitates, deforms and kills monarchs, especially in the southeastern United States.

Steele's findings on the incidence of Oe in New Orleans, besides earning her a degree, are now part of the large database that makes up Project Monarch Health. On its website, the Project encourages anyone with an interest to learn the belly-sticker routine and supplement what formal researchers have generated. Data submitted by volunteers help researchers understand where and how often monarchs get sick with the Oe parasite, and if this is changing over time. Oe threatens more than individual butterflies. Because it is highly contagious and prevents butterflies from making the long arduous flight to Mexico, it threatens the already endangered migration as a whole.

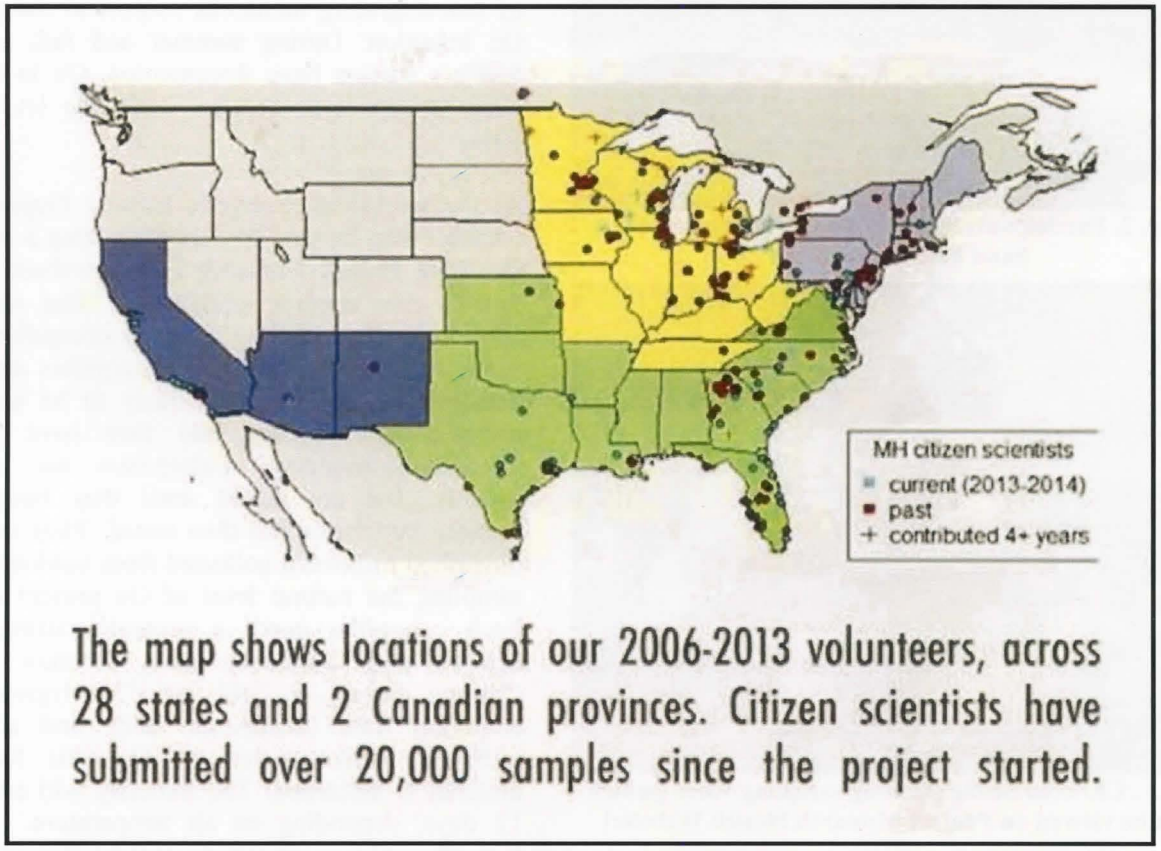


Fig. 1.

According to Steele, Oe's prevalence in the southeastern U.S. is known to be high and may be increasing. South Florida and the western Gulf coast appear to be areas of particular concern, including the greater New Orleans area. Reputable conservation groups such as Monarch Watch have for years paid attention to research and advised milkweed management techniques, such as cutting back tropical milkweed periodically, to combat the spread of Oe. Yet much education remains to be done, as evidenced by recurring examples of deformed monarchs on social media groups.

Two things need to happen now to help advance monarch conservation in our area. First, additional citizen scientist volunteers should step into the gap that Christen Steele's ending her research is going to create. Second, many more butterfly lovers need to understand the serious threat of Oe and take measures to stamp it out.

On July 17, 2021, authors of this article co-founded the NOLA Butterfly Club on Facebook and Instagram with a mission, in part, to promote Oe awareness. Club officers met with Steele to explore how to proceed. Together they made several videos of Steele explaining her findings, to be released after publication of her thesis later this year. They also decided to increase Oe education on both social media and by inaugurating workshops to present latest research and encourage volunteers for Project Monarch Health.

Fig. 2. Participants learning how to use their new hand held microscopes

Fig. 3 . Christen Steele showing sampling video (which can be viewed on Project Monarch Health Website)

The first workshop launched on Sunday, February 13, at Longue Vue House and Gardens. Twelve specially selected participants, each with three or more years experience raising monarchs, attended. The group's total number of years rearing monarch caterpillars was 210. Each participant received a kit containing a handheld microscope and other necessary Oe sampling materials. They agreed to submit their Oe testing results to a local database maintained by NOLA Butterfly Club. The Club will then forward their results to Project Monarch Health.

Christen Steele spoke first at this workshop. She discussed the symptoms of Oe infection and showed a video of the Oe sampling procedure on live monarch butterflies. Next, Ginna Hoff reviewed Monarch watch's latest understanding of the monarch migration and where the Louisiana Gulf coast fits in. She also shared her personal connections with a family residing in Michoacan, Mexico, in the mountains where the monarchs overwinter. She also discussed how the progress of the northbound spring migration roughly corresponds, in the United States, to the appearance of fresh tender native milkweed plants. In New Orleans and other subtropical areas where non-native tropical milkweed (*Asclepias curassavica)* has been widely planted in gardens, it grows so robustly and spreads so vigorously that its ubiquitous presence allows spring migrators to stay put instead of flying north. Failing to migrate, these butterflies breed in place, consuming primarily tropical milkweed, resulting in populations of non-migrating monarchs subject to rising levels of Oe infection. During summer and fall, as Christen Steele's studies have documented, Oe in the greater New Orleans area reaches incidence levels of over 90%.

At the workshop, everyone learned Project Monarch Health's step-by-step process for testing a butterfly for Oe. (See Project Monarch Health website below for link to view specific guidelines.) "Test subjects" are adult butterflies or 4^{th} or 5^{th} instar caterpillars collected from the wild. Larger, older caterpillars are preferred because they will be less likely to be inadvertently infected by handling and they have had more interaction outdoors. Caterpillars are not tested directly, but are raised until they have pupated, become butterflies and then tested. They are fed raw, unwashed milkweed collected from outdoors to ensure sampling the natural level of Oe present at the site. Each caterpillar needs a separate raising container marked with collection date, location and stage ("young larva" or "old larva"). Hygiene requires emptying frass (droppings) daily and adding new milkweed stalks. After the chrysalis forms, plant material is discarded. The butterfly will emerge in 6-12 days, depending on air temperature. When the butterfly emerges, its wings must be allowed to harden for at least 4 – 6 hours before handling. When the butterfly starts flapping around on its own, that signifies the wings have hardened.

For actual sampling, prepare the work area by wiping with 20% bleach-water and put on latex gloves. Oe is highly transmissible, so these precautions are required. Grasp the monarch using one gloved hand. If possible, do not touch the monarch with the second hand, keeping it free of potential Oe spores. Pick up a clear sticker or piece of clear tape with your "clean" hand. Firmly press the sticker to the butterfly's

Fig. 4. Ginna Hoff explaining migration

Fig. 5. Poster explaining Oe issue

Fig. 6. Christen Steele showing sampling procedure

Fig. 7. Christen Steele showing pictures of spores and butterfly scales

abdomen so that it comes into firm contact with its front and sides. (Monarchs are more durable than they look. Sampling them with moderate to firm pressure does not harm them. The butterfly scales that are removed will soon be naturally replaced.) Place the sticker onto the index card provided by Project Monarch Health. The black patterned imprint on sticker or tape is their body scales, where Oe spores will be found if the butterfly is infected. Label the sticker on the index card with a number. Go to www.monarchparasites.org/videos to watch "How to Sample Monarchs for Oe" for a video tutorial of this process.

Last step is recording the data, marking and releasing the monarch. Record the sex of the monarch on the provided data sheet. Males have "claspers" on the end of their abdomens and two black alar glands (spots) on their hindwings. Females have neither feature. Record the data of locations, dates and stages. Mark the monarch lightly with an ultra-fine point permanent marker (optional). Make a small dot or write a number to indicate it was already sampled. This will not harm the monarch and will prevent accidental sampling the same butterfly twice. (NOTE: While studying the life cycle of Diana Fritillary butterflies in Arkansas, Dr. Gary Noel Ross adopted this numbering technique so that he could observe their habits by using binoculars.)

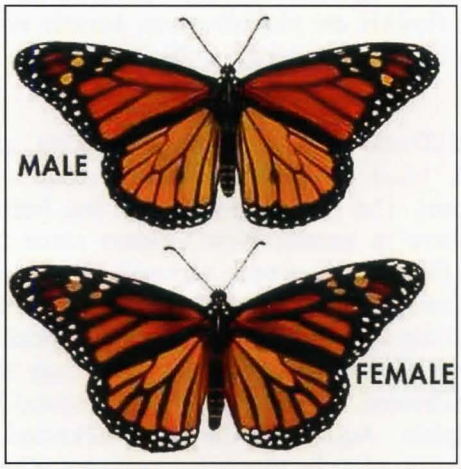
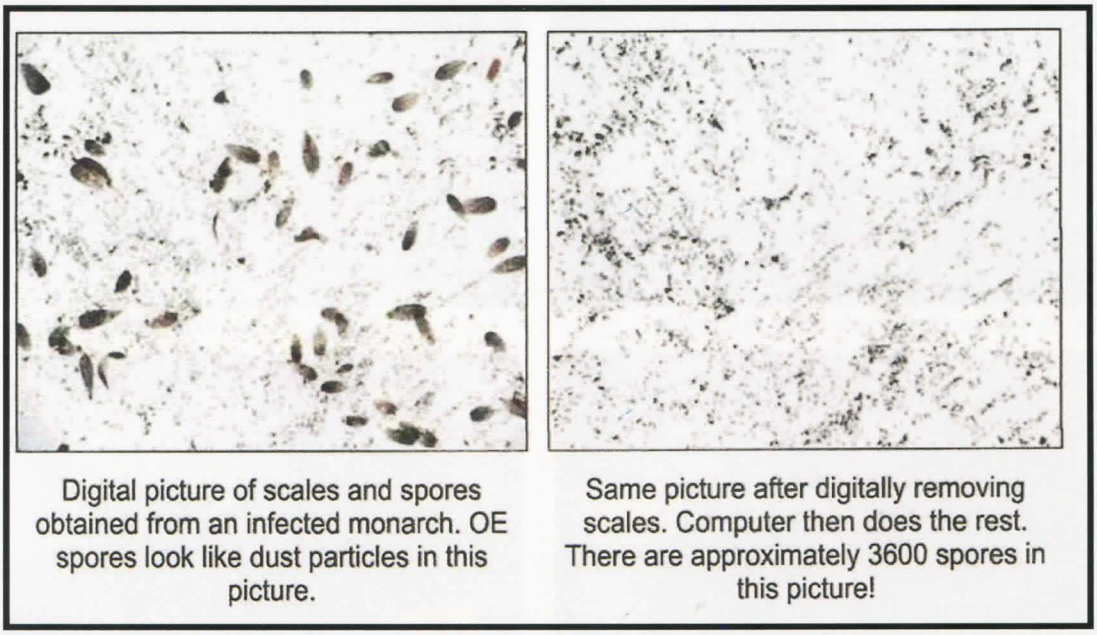


Fig. 8. Monarch male and female

Of great importance is the sanitation procedure. Any materials that have contacted monarchs during testing for Oe must be sanitized to remove spores, which can remain infectious for many months. Latex gloves used must be carefully disposed of without touching objects such as faucet handles or door knobs. Rearing containers must be soaked in 20% Clorox for several hours. Alcohol and Lysol are not sufficient to kill spores on surfaces that contacted monarchs. *Skipping this step could contaminate future monarchs.*



Digital picture of scales and spores obtained from an infected monarch. OE spores look like dust particles in this picture.

Same picture after digitally removing scales. Computer then does the rest. There are approximately 3600 spores in this picture!

Fig. 9.

Tropical milkweed has been grown in our area, especially in New Orleans, for so many years that most people think it is native but it isn't. Metro area garden centers and plant nurseries line their shelves with tropical milkweed. It is large, attractive and easy to grow. Nature lovers in the community buy it throughout the calendar year to feed hungry caterpillars believing they are helping the monarchs. With the recent surge of interest in establishing pollinator habitats and use of native plants, vendors unfamiliar with native plants sometimes mislabel tropical (*Asc. curassavica*) as native swamp milkweed (*Asc. incarnata*). Tropical milkweed has characteristic yellow/red/scarlet flowers. There is also a variety with bright yellow flowers. As for the natives, swamp milkweed flowers are pinkish-white, aquatic milkweed flowers white and butterfly milkweed has an orange flower.

Twenty different native milkweed species grow in Louisiana. Most of them are found north of Lake Ponchartrain. The native species that has been noted growing here in greater New Orleans since 1890 is aquatic milkweed, *Asclepias perennis,* as documented by a specimen in Tulane University's Herbarium. When hiking Louisiana woods at Bonnet Carre Spillway or Honey Island Swamp, one may find the aquatic milkweed in its most common natural habitat, the floodplain. Aquatic is the only milkweed whose seeds are adapted to be dispersed by water. Compared to its life in a floodplain where the plant can be overgrown by tall grasses or buried under water for months at a time, its life as a garden plant is sweet. Tropical milkweed has no native range in Louisiana; it grows only where it has been planted.

So what is the difference and why does this matter? In the metro New Orleans area, mild winters without freezes allow tropical milkweed to survive in masses from fall into the following spring. Much of it carries Oe spores. Only southern Louisiana has this issue. Areas north of Lake Ponchartrain experience much colder winter temperatures that cause a natural tropical milkweed die-back. Foliage falling to the ground carries attached Oe spores down with it. Soil organisms break down both foliage and spores. If the plant roots survive the winter, fresh spring growth will be free of spores until it is visited again by an infected female.

The Xerces Society for Invertebrate Conservation reports native aquatic milkweed to be of special value to native bees, bumblebees and honey bees. The plant supports conservations biological control, meaning it is a plant that attracts predatory or parasitoid insects that prey upon pest insects. It grows in hydrated soils, floodplains, marshes, cypress swamp, ditches, wetlands and soil that is continuously wet. Its seed pods do not contain the fluffy pappus – fine, white silky hair on the end of each seed – of wind-dispersing milkweeds.

Fig. 10.

Tropical milkweed, *Asclepias currasavica* is native to the Caribbean, South America, Central America and Mexico but is now found worldwide in tropical zones. Although its exact origin is unknown, its species name reflects the place where first specimens were likely collected; Curacao, in the southern Caribbean. Because it spreads aggressively by seed, it can become a weed in pastures, fields, along roadsides and in disturbed areas of tropical latitudes.

NOLA Butterfly Club founders investigated several intriguing questions in the course of preparing workshop information:

1. *How long has tropical milkweed been in New Orleans gardens?*
Dr. Gary Noel Ross reported that in 1955, when he was ten years old, he saw tropical milkweed growing along the sidewalk in his grandmother's garden in Gentilly (a neighborhood in New Orleans). "It came up along the sidewalk…not that she had planted it." He thought a neighbor had it growing and seed had blown over to their side.

Amy Graham, Director of Gardens at Longue Vue House & Gardens, recalled that in 1992 the Becnel Nursery in Belle Chasse was growing tropical milkweed for the retail market.

2. How did tropical milkweed get started here in New Orleans?
Our best guess is from seeds. In Charlotte Seidenberg's book, "The New Orleans Garden: Gardening in the Gulf South," her discussions suggest that tropical milkweed seeds could be ordered in

packets through seed catalogues long before commercial transporting of plants was possible. Her book mentions a "Seed Merchant". Linda remembers shopping at Reuter Seed Company many years ago. That seed company has since dissolved and closed.

3. How long have monarchs been overwintering in New Orleans?

Apparently for quite a while. Frances Welden (butterfly mentor to author Linda Auld since 1992) began raising monarchs at Lusher School as student projects and tagging monarchs starting in1969, for Fred Urquhart's migration study program at the University of Toronto. Her meticulous records show she tagged "reared" monarchs through the winters of 1969 and 1970. Presumably these were monarchs found in her garden. She and her husband also tagged "wild" monarchs that were clearly migrators, caught at specific locations north and south of New Orleans. A poignant comment in her notes recalls that she and her husband Arthur sometimes would lay on a cot in their driveway to count south-flying butterflies as passed overhead. One of her tagged specimens was recovered in Mexico.

4.What is take-away of all this?

As this article was being finalized, Andy Davis of the blog site monarchscience.org, connected with the Odum School of Ecology at the University of Georgia, posted a layperson's language summary of a new study soon to be published by "the combined world experts in Oe": Sonia Altizer, Dr. Jaap de Roode and Dr. Ania Majewski. (See www.monarchscience.org. for the text.) Using tape samples from 60,000 monarchs collected by scientists –in this study, not including citizen volunteer data—over 50 years, the study documents a statistically significant winter colony size, and vice-versa."

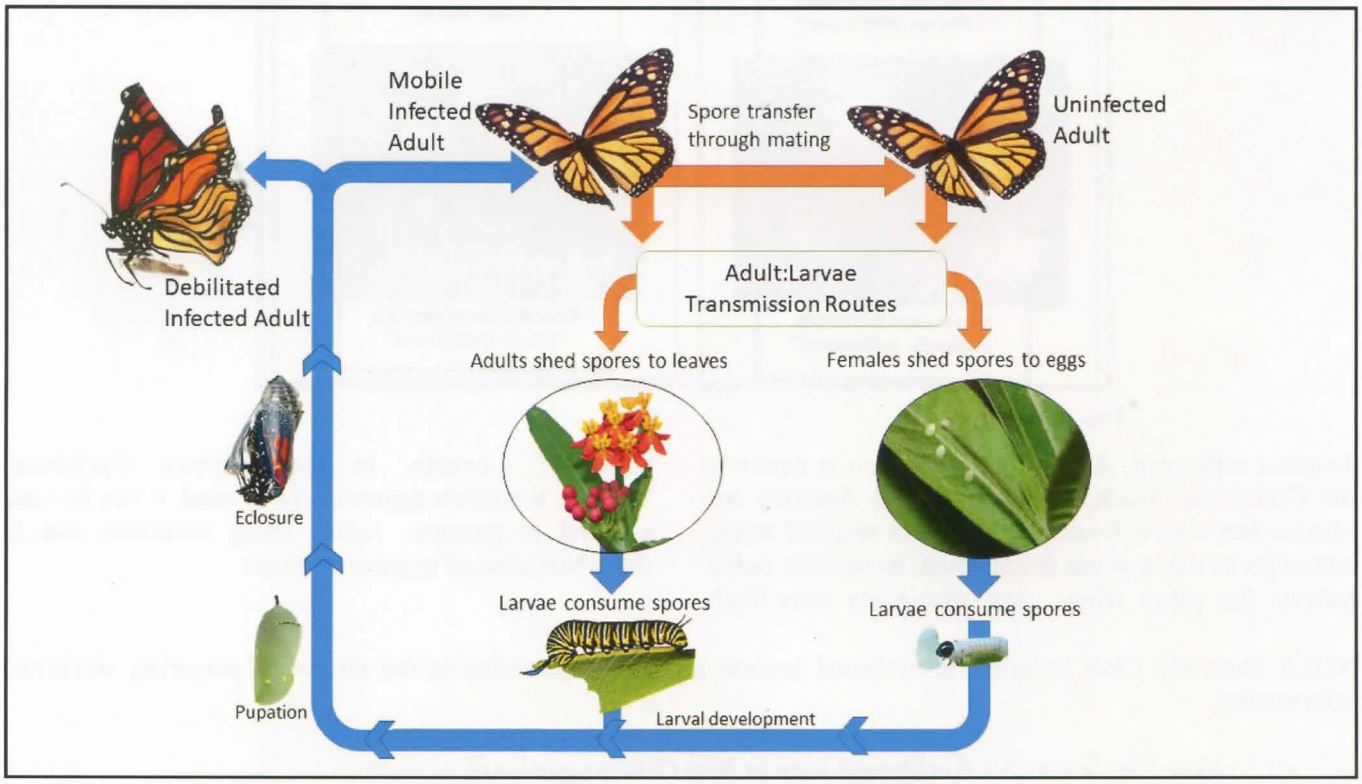


Fig. 11. Produced by Christen H. Steele

The researchers could find no correlation to ecological factors such as precipitation or temperature. Instead, what closely correlated was what might be called unintentional consequences of three well-intentioned human interventions: commercial monarch breeding programs, home rearing of monarchs for release and planting of tropical milkweed. All three of these activities are concentrated in southern states, where migrating monarchs pass through and all three are known to foster the spread of Oe infection. In other words, "The timing of the increase coincides with the rise in collective efforts to save the monarchs in the last 15-20 years, including mass-rearing of monarchs and planting of tropical milkweed."

What is perhaps most sobering are the mathematical model suggesting the loss of successfully migrating butterflies to Oe runs to "tens of millions."

The good news is that all everyone who cares about monarchs can take a few simple easy actions to turn this situation around. Curtail mass rearing, give up home rearing for release and get rid of tropical milkweed.

NOLA Butterfly Club will present workshops in April and May. Please contact the authors per below if you would like to be included.

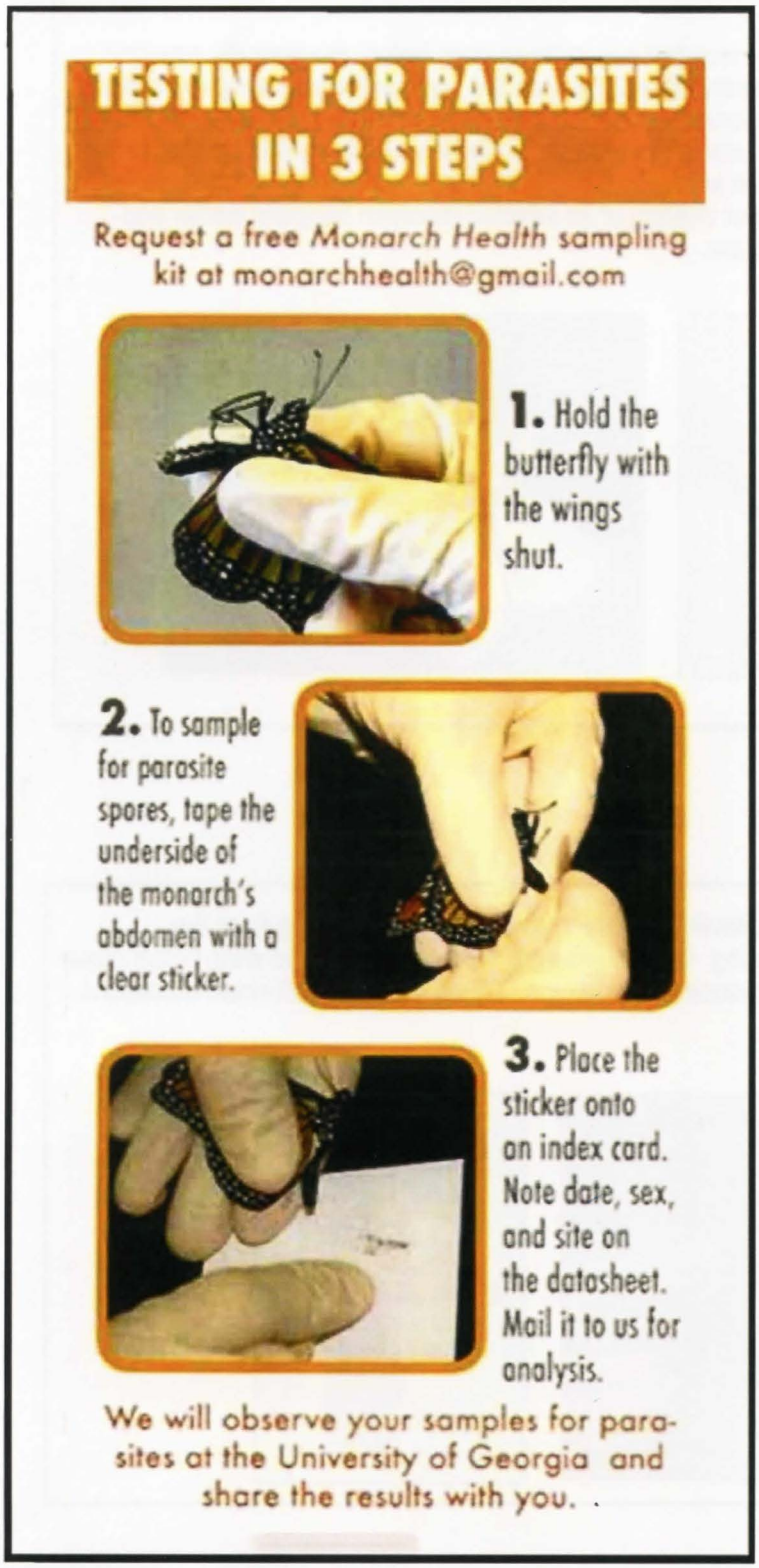
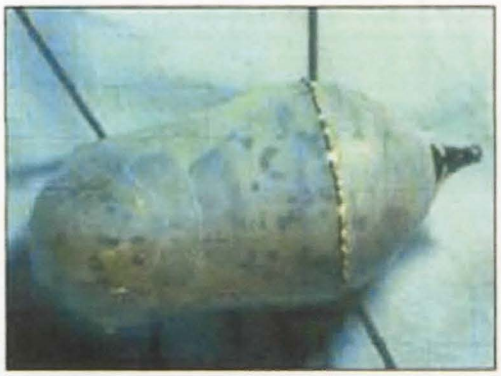


Fig. 12.

Fig.13.

How to tell if butterflies are infected with OE

An infected pupa may develop dark spots or blotches two or three days before the butterfly emerges. These abnormal dark areas are parasite spores. Spores form on the eyes, antennae, wing veins, but mostly on the abdomen. You can see the spores through the outside layer of the pupa a day or two before pigments that color the butterfly normally darken the pupa. Before a butterfly emerges from the chrysalis, pigments are laid down coloring the scales that cover the butterfly. This normal change in the color of the pupa is symmetrical. The color change of an infected monarch happens earlier and does not create a balanced pattern on the pupa.



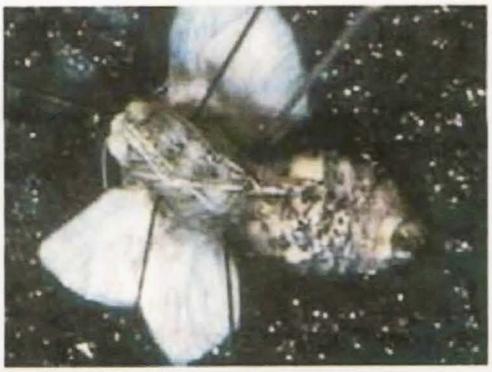


Fig. 14.

Adults that are heavily infected with OE are weak and often have difficulty emerging from the chrysalis. Some monarchs die before emerging. Others emerge, but are too weak to cling to the pupal case. They fall to the ground before fully expanding their wings. These severely deformed monarchs do not survive long.

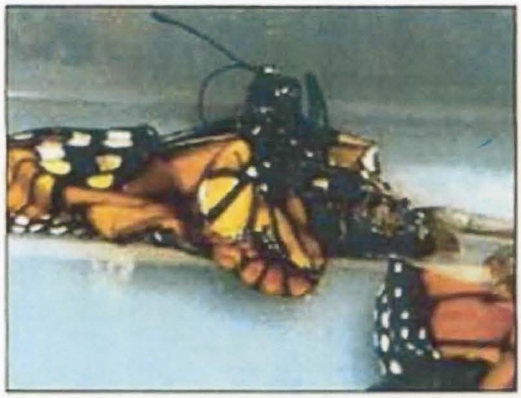


Fig. 15.

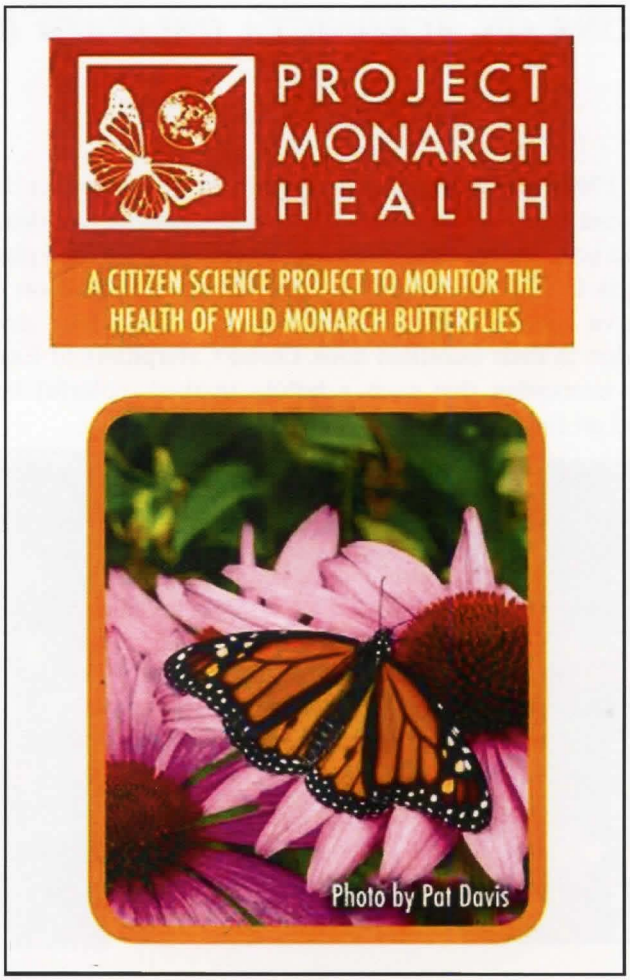


Fig.16.

Scientific publications based on Monarch Health data:

* Bartel et al.2011, in the journal *Ecology*: "Monarch butterfly migration and parasite transmission in eastern North America"
* Satterfield et al. 2015, in the journal *Proceedings of the Royal Society B:* "Loss of migratory behavior increases infection risk for a butterfly host"

Other monarch citizen science programs:

Monarch Larva Monitoring Project - www.mlmp.org
Journey North – www.learner.org/jnorth
Monarch Watch – www.monarchwatch.org
Monarchs Across Georgia – www.monarchsacrossga.org

Project Monarch Health contact information:

Website: Monarchparasites.org

Email: monarchhealth@gmail.com
Phone: (706) 542-3485

Local New Orleans Citizen Science Project Contacts:

Linda Barber Auld, NOLA BugLady: nolabuglady@gmail.com
Ginna Hoff: Facebook NOLA Butterfly Club, contact via Messenger

All workshop photos (Figs. 2-7,10) were taken by Linda Barber Auld NOLA BugLady.

The Southern Lepidopterists' Society thanks Sonia Altizer (Monarch Health webpage and archives) for allowing us to reprint photos Figs. 1,8,9,12-16.

(Linda Barber Auld NOLA BugLady, E-Mail: nolabuglady@gmail.com)

OBSERVATIONS ON *ACRONICTA OBLINATA* (SMITH, 1797)

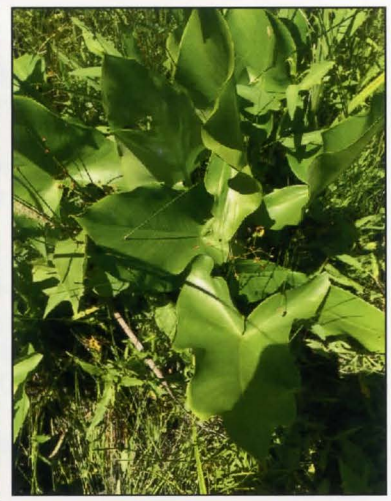
BY

JEFFREY SLOTTEN

Acronicta oblinata (JE Smith, 1797), the smeared dagger moth, is a moth of the family Noctuidae. It is found in eastern North America from Nova Scotia west across Canada to British Columbia, north to Lake Athabasca and south to Florida and Texas. The very showy larva feeds on a variety of wetland plants. I found this larva on May 15, 2021, near Darien, Georgia in McIntosh County. The larva was found on *Sagittaria latifolia*, commonly known as Arrowhead. The larva spun a tightly woven cocoon unlike many *Acronicta*, according to Wagner, Schweitzer, Sullivan and Reardon in their excellent book Owlet Caterpillars of Eastern North America, Princeton University Press, 2011. It is interesting that such a boldly marked, colorful larva ecloses into a rather drab looking moth. The adult eclosed on June 8, 2021.

***Acronicta oblinata* larva**

***Acronicta oblinata* host plant and habitat**



Adult *Acronicta oblinata*

COLOR VARIATION OF LAST INSTAR LARVAE OF THE GULF FRITILLARY (*AGRAULIS INCARNATA NIGRIOR*, LEPIDOPTERA: NYMPHALIDAE, HELICONIINAE) IN FLORIDA

BY

MARC C. MINNO

The Gulf Fritillary is one of the most abundant and widely distributed butterflies in the southeastern United States. Being a garden butterfly (Minno and Minno, 1999), numerous images of adults and immatures can be found online. The scientific name of the eastern population has long been *Agraulis vanillae nigrior* Michener, 1942 (Kimball, 1965, Pelham, 2008), but changes have been proposed recently based on new information from genetic studies.

Zhang *et al.* (2019) found a COI barcode difference of only 7.9% between *Agraulis vanillae* (Linnaeus, 1758) and *Dione moneta* Hübner, [1825] suggesting that *Agraulis* may best be placed as a subgenus of *Dione*. Further inspection of a nuclear genomic tree revealed a pronounced divergence between specimens from Jamaica and from the USA (Zhang *et al.*, 2020). They determined the Caribbean population to be *Dione vanillae insularis* (Maynard, 1889) and the USA species to be *Dione incarnata* N. Riley, 1926, consisting of eastern *Dione incarnata nigrior* and western *Dione incarnata incarnata*. After a comparative analysis of all the data sources available Núñez *et al.* (2021, Appendix S3) concluded that *Agraulis* is actually best kept as a genus separate from *Dione*. Pelham (2022), however, follows Zhang *et al.* (2019).

Larvae of the Gulf Fritillary feed mostly on Maypop (*Passiflora incarnata*) in northern and central Florida and Corkystem Passionflower (*Passiflora suberosa*) in central and southern Florida (Minno *et al.*, 2005). Whereas the caterpillars of *Agraulis incarnata nigrior* are typically mostly orange with black scoli (Fig. 1A), those of *Agraulis incarnata incarnata* are striped with gray.

The larva of *Agraulis vanillae insularis* from Cuba (Fig. 1B) is very different, having a black head and broad black stripes on the body. Unlike Gulf Fritillary larvae in Florida those in Cuba are very secretive, hiding, and difficult to find, much like those of the Julia (*Dryas iulia*). The differences in the larva from Cuba support the idea that Caribbean populations are a different species. I have not seen this type of larva in Florida, but they may occur in the Florida Keys at times since *Agraulis* are strong fliers and disperse widely as adults.

There is a lot of variation in the color of Gulf Fritillary larvae in Florida. Some with narrow gray stripes are not uncommon, but only occasionally I have found individuals that look like the western *A. incarnata incarnata* with broad gray stripes (Fig. 1C and D). I have wondered about these. The gray striped larvae in Florida could just be due to genetic variation or perhaps because of parasitoids or seasonal effects, but some may actually be the offspring of western Gulf Fritillaries that have accidently wandered into Florida.

On January 22, 2022, I found three Gulf Fritillary larvae with gray stripes on separate plants of *Passiflora suberosa* near Loxahatchee National Wildlife Refuge, Palm Beach County, Florida (Fig. 1C and D). I collected and reared two of these to the adults on *P. suberosa*. Neither of the two caterpillars were parasitized. Both females that emerged were typical *Agraulis incarnata nigrior* (Fig. 1E), which is not as bright orange as *A. incarnata incarnata* and has larger black spots (Michener, 1942).

These findings suggest that the gray striped larvae in Florida may be due to genetic variation, perhaps from residual alleles or occasional introgression with *A. incarnata incarnata*, but I think they are most likely a seasonal form, the result of cool winter temperatures. The few gray striped larvae that I have seen in Florida were all found in the winter months. This theory would be relatively simple to test in a laboratory because Gulf Fritillaries are easy to rear in captivity, provided enough host plant is available.

I greatly appreciate the help of Carolann Sharkey with the TREE Institute International, Key West, Florida and Douglas M. Fernández Hernández of Camagüey, Cuba, in support of exploring Cuba's magnificent biodiversity.

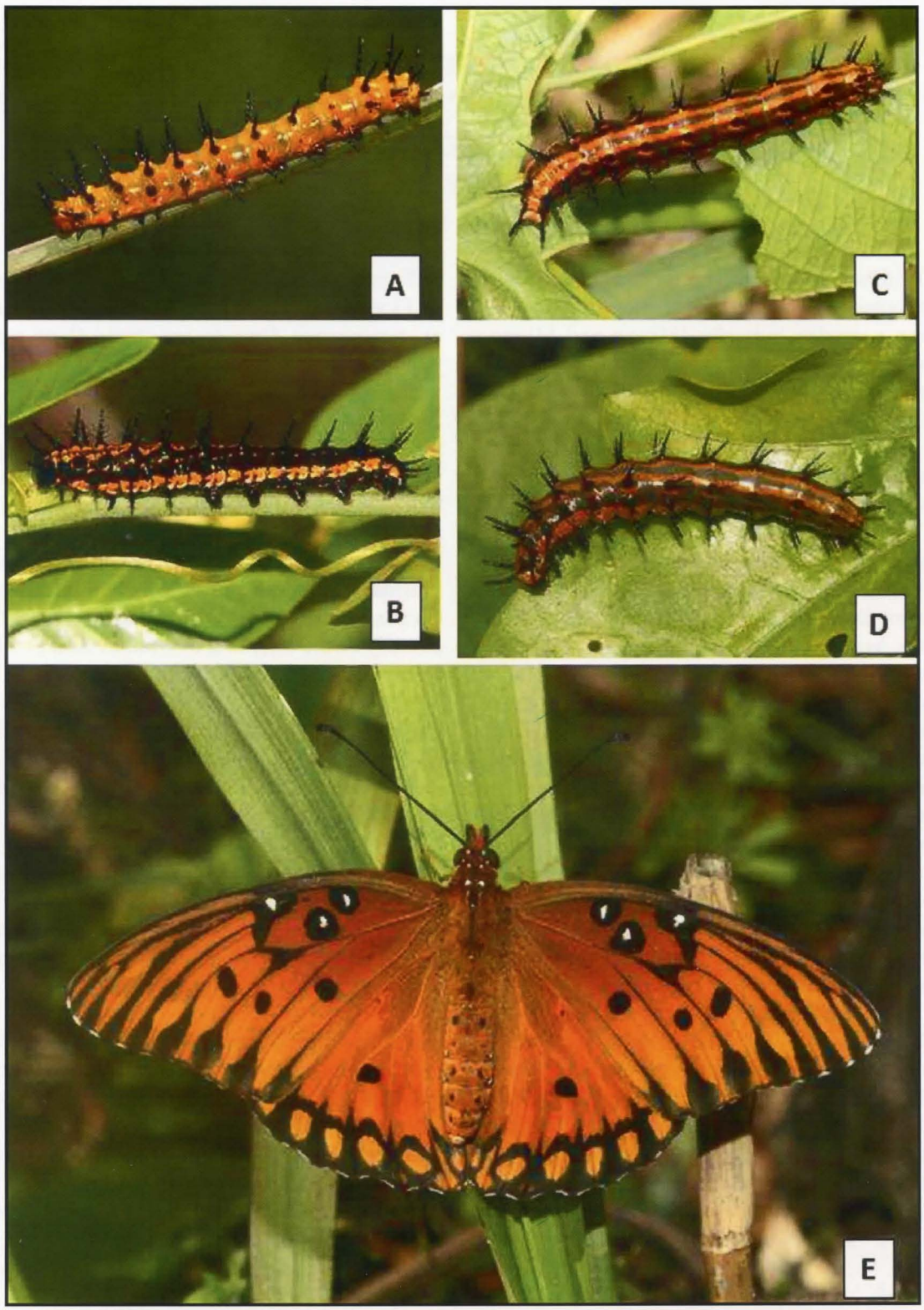


Figure 1. Gulf Fritillary images by M.C. Minno.

A) *A. incarnata nigrior* typical larva on *Passiflora suberosa*, Loxahatchee National Wildlife Refuge (NWR), Palm Beach County, Florida, Aug. 28, 2020.

B) *A. vanillae insularis* on *Passiflora* sp., Cuba, Ciego de Ávila Province, Cayo Coco, Nov. 18, 2013.

C) *A. incarnata nigrior* striped larva on *P. incarnata*, Merritt Island NWR, Brevard Co., Mar. 10, 2013.

D) *A. incarnata nigrior* striped larva on *P. suberosa*, near Loxahatchee NRW, Jan. 22, 2022.

E) Adult female reared from the larva shown in D.

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

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Fig. 1. Migratory monarch on make-shift net aboard UNOCAL WC-280 gas production platform, Gulf of Mexico. October 1991 (Photo by Gary N. Ross).

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Fig. 2. Migratory monarchs resting for night on rope aboard UNOCAL WC-280 gas production platform, Gulf of Mexico. October 1992 (Photo by Gary N. Ross).

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Fig 3. Migratory monarch resting on metal equipment aboard UNOCAL WC-280 gas production platform, Gulf of Mexico. October 1991 Photo by Gary N. Ross).

Fig. 4. Migratory monarch resting on metal valve aboard UNOCAL WC-280 gas production platform, Gulf of Mexico. October 1991 Photo by Gary N. Ross).

Fig. 5. Migratory monarch resting on metal crane aboard UNOCAL WC-280 gas production platform, Gulf of Mexico. October 1992.

Fig. 6. Cluster of dead spring migratory monarchs washed ashore on beach due to strong headwinds from an unusual spring cold front. Johnson Bayou (Cameron Parish). April 1992.

TIDBITS FROM THE MANUSCRIPTS OF THE PIONEERING AMERICAN ENTOMOLOGIST THADDEUS W. HARRIS

BY

JOHN V. CALHOUN

A physician and librarian, Thaddeus William Harris (1795-1856) (Fig. 1) is most remembered for his entomological contributions, especially the influential *A Report on the Insects of Massachusetts, Injurious to Vegetation*, which was published in 1841. This work was so popular that Harris reprinted it under a slightly different title in 1842 and revised it a decade later (Harris 1841, 1842, 1852). In 1862, six years after Harris' death, the book was enlarged by Charles L. Flint, who was then serving as the secretary of the Massachusetts Board of Agriculture. Flint added much new material based on Harris' original manuscripts. This third edition (Harris 1862) was reissued until 1890 (Calhoun 2009). Harris' life and influence on American entomology are detailed in the excellent biography by Elliott (2008).

Fig. 1. Thaddeus W. Harris (Scudder 1869).

Four years after Harris' death, his personal library and manuscripts were purchased from his widow, Catherine, for the Boston Society of Natural History (BSNH) (Calhoun 2007). The former BSNH museum evolved into the Boston Museum of Science, and most of Harris' manuscripts remained there until 1992, when they were transferred to the Ernst Mayr Library of the Museum of Comparative Zoology, Harvard University (MCZC). Harris' insect collection was purchased from his widow for the BSNH in 1858, and it was transferred to MCZC in 1941 (Darlington 1941).

Born in Dorchester, Massachusetts, Harris firmly believed that American naturalists should be the first to describe new species of American insects. Up to that time, most North American insects had been described by Europeans, who did not always respect their American counterparts. Harris often complained of the extreme difficulty in determining insects without access to properly identified specimens and published descriptions from Europe. For help with identifications, he sent thousands of specimens to fellow American entomologists Thomas Say and John E. Le Conte. He also sent specimens to the naturalist Nicholus M. Hentz, who had immigrated to American from France in 1816. The English lepidopterist Edward Doubleday also offered valuable advice, becoming such a close friend that Harris named one of his sons Edward Doubleday Harris. Despite this assistance, Harris was frustrated and worried about redescribing too many species. He was loath to describe new insects before he had a thorough knowledge of their life histories, believing this would result in "imperfect" descriptions. Unfortunately, this cost him the authorship of many new species, which were described by other entomologists.

In 1830, Harris wrote, "I formed and have adhered to the resolution not to send out of the country an American insect without a specific name." If Harris could not identify an insect, he created a manuscript name for that species. Calling them "arbitrary names," he noted that they were "known to my friends at home & abroad." Harris used these names for his own collection and frequently mentioned them in correspondence. This allowed him to lay claim to any new species until he could personally describe them. Harris ceased using an "arbitrary name" if he found that the associated species had already been described. This plan was not foolproof, however, and one such name for a common butterfly appeared in print before Harris got around to publishing it himself.

Harris assigned the name *Lycaena americana* to specimens of *Lycaena phlaeas* L. (Fig. 2) from eastern North America. His manuscripts suggest that he used this name as early as the 1830s, and he also was the first to employ the common name "American copper butterfly." Harris had planned to include the description of *L. americana* in the 1841 edition of his report on injurious insects, but he decided to omit this entry among others, probably to focus on species of economic importance. In 1852, Harris wrote of this butterfly, "I

consider it as a distinct species, and in my manuscript it stands as *L. Americana"* (Kirtland 1874).

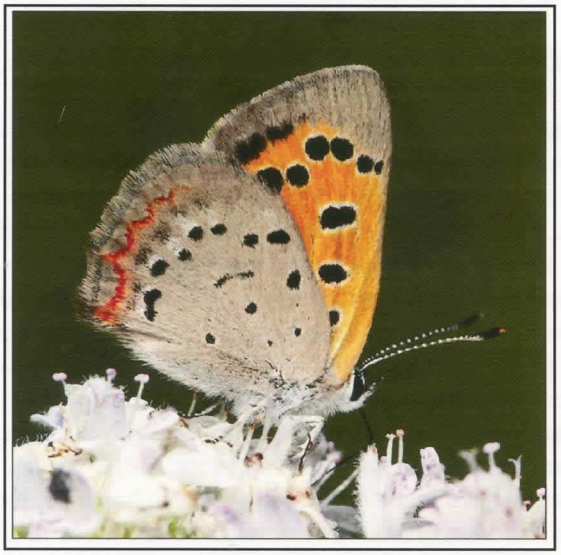

Fig. 2. *Lycaena phlaeas hypophlaeas*, once known as *Lycaena americana* (photo: Bryan Pfeiffer).

Harris' habit of sharing his "arbitrary names" resulted in *Lycaena americana* being published by D'Urban (1860a, 1860b) in reference to *L. phlaeas*. Although D'Urban credited Harris for the name, subsequent authors ascribed it to D'Urban. However, D'Urban's usage was not accompanied by a description of the butterfly, thus it is now considered to represent an invalid name (nomen nudum).

In his Synopsis of the Described Lepidoptera of North America, Morris (1862) also published the name *americana*, but in the genus *Polyommatus*. Like D'Urban, Morris credited Harris for the name, but he took it a step further by including a description of the butterfly. According to the rules of zoological nomenclature, this would assign the name *americana* to Morris. Indeed, a few subsequent authors credited Morris for the name, but they overlooked one critical piece of information. Morris' Synopsis was published in February 1862, while the third edition of Harris' book (in which Flint resurrected the name *americana* and its original description from Harris' manuscripts) was published in January 1862. The publication of Harris' description appeared first, thus Harris is rightfully granted authorship of *Lycaena americana*, even though he never published the name during his lifetime.

Butterflies described by Harris as *L. americana* were long ago considered by some authors to represent the same butterfly as what Boisduval (1852) had named *Polyommatus hypophlaeas*, allegedly based on at least one specimen from California. This forced the name *americana* into the synonymy of *hypophlaeas*. Later still, it was generally accepted that eastern populations of this butterfly represented a separate subspecies, *Lycaena phlaeas americana*, thereby brining Harris' name back into usage. However, Emmel et al. (1998) argued that a specimen at the National Museum of Natural History (Smithsonian Institution), which is identified as the "type" of *hypophlaeas*, was not actually collected in California, but farther east, such as in the vicinity of Boston, Massachusetts. Although there are problems with this theory (the "type" specimen may not be a type at all, and it more likely was collected in New York), the conclusions of Emmel et al. (1998) have once again relegated the name *americana* to the synonymy of *hypophlaeas*. Eastern populations of this butterfly are now recognized as the subspecies *Lycaena phlaeas hypophlaeas* (Pelham 2022).

Another of Harris' "arbitrary" butterfly names never appeared in print. Among his manuscripts are three pen and ink studies of the wing veins of a pierid butterfly, which he identified using the manuscript name *Pontia ohioensis*. One of these sketches includes faint pencil outlines of the dorsal wing pattern, revealing that it portrays a male checkered white, *Pontia protodice* (Boisduval & Le Conte) (Fig. 3), which closely matches a specimen in Harris' collection at MCZC.

Fig. 3. *Pontia protodice*, almost named *Pontia ohioensis* (photo: Edward Perry)

Why did Harris choose the name *ohioensis*? When Harris' insect collection came to MCZC, it was accompanied by his handwritten collection catalog, which lists all the Lepidoptera specimens that he possessed. Titled "Index Lepidopterum," this catalog includes entries that correspond to numbers on Harris' specimens. His collection contains four specimens of *P. protodice*, two of which are males. The corresponding entry in Harris' "Index" gives the source of these specimens as "Ohio, Dr. Kirtland." The physician and naturalist Jared P. Kirtland (1793-1877) moved in 1823 from Connecticut to the vicinity of Cleveland in northeastern Ohio. He was influential in the formation of the Cleveland Academy of Natural Sciences, which was

later renamed The Kirtland Society in recognition of his contributions. One of the rarest songbirds in North America, Kirtland's warbler (*Dendroica kirtlandii* Baird), is also named in his honor. Kirtland's insect collection was donated to the former Cleveland Academy of Natural Sciences, but was later lost (Bubna 1897). Only a few of his butterfly specimens have survived in other collections.

It is difficult to determine when Harris first used the name *Pontia ohioensis*. It is easy to assume that it was before 1830, when this butterfy was described as *Pieris protodice* based on specimens from New York in the collection of the French entomologist Jean B. A. D. de Boisduval. However, Harris listed his specimens of this species on the second to last page of his collection catalog; no. 766 of 791 entries. This suggests that they were acquired in the 1850s, when Harris is known to have received other insects from Kirtland (Kirtland 1874). Regardless of when he received these specimens, Harris ultimately identified them in his collection catalog as *"Pieris protodice,"* apparently abandoning his notion of *P. ohioensis*. This is an excellent example of how Harris, and other pioneering entomologists, struggled to make sense of the many unfamiliar and poorly understood species they encountered.

Acknowledgements: Thanks are extended to Dana Fisher, Philip D. Perkins, and Robert Young (MCZC, Harvard University) for access to manuscripts and specimens under their care. I also thank Ed Perry and Bryan Pfeiffer for kindly allowing me to reproduce their butterfly photos.

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A NATIONAL BUTTERFLY FOR CUBA: Gundlach's Swallowtail (*Parides gundlachianus*)

BY

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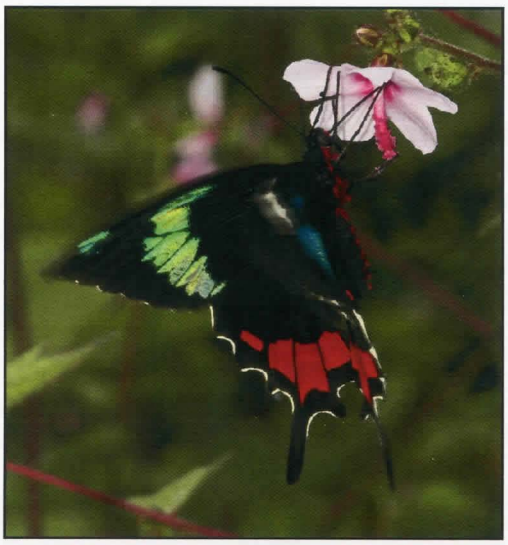

Cuba is one the world's great "hotspots" for biodiversity and thousands of tourists visit the island every year to see birds, butterflies, and other wildlife. Ecotourism is a growing industry in Cuba.

At least 200 different kinds of butterflies have been reported to occur in Cuba. The butterflies are mostly of tropical affinity and vary greatly in size, color, and behavior. Some occasionally travel great distances over the ocean and the faunas of Cuba, the Bahamas, Jamaica, Cayman Islands, Hispaniola, and Florida share a number of species. However, even such widely distributed species may have unique regional forms (subspecies). About 39% of Cuban butterflies are not known to occur anywhere else (endemic).

The Cuban people take great pride in the natural heritage of their island and the government has designated the following species as national symbols of the country: National Flower (White Mariposa Ginger), National Tree (Royal Palm), National Bird (Tocororo).

In order to promote awareness of butterflies and Cuba's special fauna, we are proposing that the endemic Gundlach's Swallowtail (*Parides gundlachianus*) be designated as Cuba's National Butterfly. This is a large and beautiful butterfly. The pattern of red, iridescent blue/green, and white on a black background is striking. The typical Gundlach's Swallowtail is a common butterfly in eastern Cuba from coastal forests to the highest mountains. There is also a different subspecies of Gundlach's Swallowtail (*Parides gundlachianus alayoi*) that occurs in the mountains of western Cuba.

This butterfly has been discussed in popular and scientific books and has been considered the most iconic Cuban species (Mancina *et al.*, 2020). Its image has also been used in stamps and it was one of the butterflies depicted in the first Cuban series dedicated to insects in 1958 (Reyes and Núñez, 2008).

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REPORTS OF STATE COORDINATORS

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

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

Charlie sends in the following Florida Lepidoptera reports:

Butterflies

Ronda Spink and Barbara Woodmansee reported on 23 observation trips from January 1 to February 24 in north western counties (Alachua, Dixie, Levy, Hernando, Levy and Taylor). Species comprising the composite list below included:

Thorybes pylades
Erynnis horatius
Erynnis zarucco
Lerema accius
Ancyloxypha numitor
Hylephila phyleus
Poanes viator
Panoquina ocola
Battus philenor
Papilio glaucus
Papilio palamedes
Phoebis sennae
Pyrisitia lisa
Eurema daira
Abaeus nicippe
Parhassius m-album
Atlides halesus
Callophrys henrici
Callophrys gryneus
Calycopis cecrops
Strymon melinus
Calephelis virginiensis (caterpillar)
Hemiargus ceraunus
Libytheana carinenta
Euptoieta claudia
Agraulis vanillae
Heliconius charithonia
Vanessa atalanta
Polygonia interrogationis
Junonia coenia
Phyciodes phaon
Phyciodes tharos
Vanessa atalanta
Hermeuptychia sosybius
Danaus plexippus
Danaus gilippus (adult and one caterpillar on *Asclepius perennis*)

(Note: Please contact me at covell@louisville.edu if you wish me to send your precise localities and dates.)

My observations so far in Gainesville, Alachua County, Jan. 1 – March 16 include *Erynnis sp., Hylephila phyleus, Papilio glaucus, Papilio troilus, Phoebis sennae, Zerene cesonia, Leptotes cassius, Junonia coenia, Heliconius charithonia, Agraulis vanillae,* and *Danaus plexippus*.

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Moths

Goethe State Forest, Levy Co., FL. 31.xii.2021.
Jim Hayden's list:

Tineidae:
Elatobia carbonella (Dietz): **New State Record**.

Gelechiidae:
Coleotechnites sp. *australis*-group
Anacampsis sp.

Tortricidae:
Sparganothis niteolinea Powell & J. Brown
Rhyacionea subtropica W.E. Miller
Sonia constrictana (Zeller)
Satronia tantilla Heinrich

Crambidae:
Elophila nebulosalis (Fernald)
Elophila (Synclita) obliteralis (Walker)
Sufetula carbonalis Hayden
Eurrhyparodes lygdamis Druce
Samea multiplicalis (Guenée)
Samea castellalis Guenée
Diacme adipaloides (Grote & Robinson)
Desmia ploralis (Guenée)
Spoladea recurvalis (Fabricius)
Pilocrocis ramentalis Lederer
Syngamia florella (Stoll)
Crambus quinquareatus Zeller
Crambus satrapellus (Zincken)
Raphiptera argillaceella (Packard)
Neodactria sp.
Argyria lacteella auct.

Pyralidae:
Pococera sp.
Anacampsis ochrodesma (Zeller)
Moodna ostrinella (Clemens)
Caudellia apyrella Dyar
Macrorrhinia endonephele (Hampson)
Laetilia coccidivora (J.H. Comstock)

Erebidae:
Clemensia ochreata Schmidt & Sullivan
Hypenodes franclemonti Ferguson
Sigela sordes Troubridge
Schrankia macula auct.
Amolita obliqua Smith
Antiblemma perva Troubridge

Nolidae:
Afrida ydatodes Dyar

Noctuidae:
Leucania incognita (Barnes & McDunnough)

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Jeffrey Slotten sends in the following report (same area as above):

Jim Hayden, Jim Troubridge and I met at Goethe State Forest off FR337 (Levy County, Florida, night of December 31, 2021) at the headquarters and set up light sheets for moths. The habitat was mixed oak woods overlooking cypress, blueberry and wax myrtle among other plants. Here is a list of moths we collected or did not collect.

Automeris io (F.)
Apantesis vittata (F.)
Apantesis nais (Drury)
Afrida ydatodes (Dyar)
Virbia laeta (Guerin-Men.)
Physula albipunctilla Schaus
Lascoria alucitalis (Gn.)
Sigela sordes (Troubridge)
Hypena scabra (F.)
Phytometra rhodarialis (Wlk)
Antiblemma perva (Troubridge)
Pseudanthracia coracias (Gn.)
Zale squamularis (Drury)
Zale metata (Smith)
Mocis marcida (Gn.)
Argyrostrotis quadrifilaris (Hbn.)
Paectes abrostoloides (Gn.)
Spodoptera albula (Wlk.)
Elaphria chalcedonia (Hbn.)
Condica confederata (Grt.)
Amolita obliqua (Smith)
Chaetaglaea tremula (Harvey)
Chaetaglaea sericea (Morr.)
Leucania incognita (B. & McD.)

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

Here is the 1st summary for 2022:

Most records are from James Adams (JKA or no notation) and Lance Durden (LD). Other contributors are spelled out with the records. Most records are of first of the year specimens, uncommon species, county records, and records for new locations. Records are from 2022 unless otherwise specified.

Calhoun, Gordon Co., JKA residence:
GEOMETRIDAE: *Ceratonyx satanaria*, Feb. 17. **EREBIDAE**: *Dinumma deponens*, at bait, March 1. **NOCTUIDAE**: *Lithophane bethunei*, at bait, Feb. 6.

Taylor's Ridge, 5 miles W of Villanow, south of Hwy 136, Walker Co.:
Feb. 16-17:
GEOMETRIDAE: *Ceratonyx satanaria*. **NOCTUIDAE**: *Lithophane querquera*.
March 5-6:
GEOMETRIDAE: *Cladara limitaria, Ceratonyx satanaria* (common), *Selenia kentaria*. **NOCTUIDAE**: *Feralia major*.

Crockford-Pigeon Mountain WMA, 8 mi. WSW of La Fayette, Walker Co.:
March 6:
PIERIDAE: *Anthocharis* (*Falcapica*) *midea*. **LYCAENIDAE**: *Parhassius m-album, Celastrina ladon, Celastrina neglecta* (EARLY).

Chattahoochee Fall Line WMA, Almo Blackjack Tracts, Talbot Co., 17 May 2021, Roy Cohutta:
HESPERIIDAE: *Megathymus cofaqui*, EARLY (?) record, few recent adult records in state.

Statesboro, Bulloch Co., Dec. 25, 2021 through Jan 1, 2022, Lance Durden:
CRAMBIDAE: *Pyrausta tyralis, Diaphania infimalis* (COUNTY). **LYCAENIDAE**: *Hemiargus ceraunus, Celastrina ladon*. **NYMPHALIDAE**: *Heliconius charithonia*. **EREBIDAE**: *Selenisa sueroides*. **NOCTUIDAE**: *Feralia major*.

Canoochee Sandhills WMA, Bulloch Co., Lance Durden:
August 9-10, 2021:
PSYCHIDAE: *Cryptothelea gloverii*. **CRAMBIDAE**: *Microcrambus elegans*. **PYRALIDAE**: *Lepidomys irrenosa, Dioryctria amatella*. **MEGALOPYGIDAE**: *Megalopyge lacyi*. **LIMACODIDAE**: *Acharia stimulea, Apoda bigutatta, Isochaetes beutenmuelleri, Prolimocodes badia, Natada nasoni*. **MIMALLONIDAE**: *Lacosoma chiridota*. **GEOMETRIDAE**: *Macaria bicolorata, Iridopsis ephyraria, Hypomecis umbrosaria, Lomographa vestaliata, Metarranthis homuraria, Euchlaena marginaria, Pero honestaria, Tacparia zalissaria, Nemoria saturiba, N. bistriaria, N. elfa, Scopula timandrata*. **NOTODONTIDAE**: *Datana drexelii, D. contracta, D. major, D. perspicua, D. angusii, D. integerrima, D. ranaeceps, Heterocampa astarte, Heterocampa varia, Ianassa lignicolor, Pareschra georgica*. **EREBIDAE**: *Crambidia pallida, C. lithosioides, C. uniformis, Cisthene plumbea, C. packardi, C. subjecta, Virbia rubicundaria, Hypoprepia fucosa, Spilosoma virginica, Halysidota tessellaris*. **SPHINGIDAE**: *Paonius excaecata, Lapara coniferarum, Darapsa myron*. **SATURNIIDAE**: *Citherona regalis, Eacles imperialis, Dryocampa rubicunda, Automeris io*. **EREBIDAE**: *Idia scobialis, I. majoralis, Zanclognatha marcidilinea, Z. obscuripennis, Redectis vitraea, Catocala carisimma, Hyperstrotia flaviguttata, H. nana, H. aetheria, Condysia smithii, Cutina distincta, Argyrostrotis anilis, A. sylvarum*. **NOLIDAE**: *Meganola spodia, M. phylla, M. minuscula*. **NOCTUIDAE**: *Acronicta hamamelis, Spragueia leo, Callopistria molissima*.
Sept. 6-7, 2021:
TORTRICIDAE: *Pelochrista pallidipalparia*. **PYRALIDAE**: *Lepidomys irrenosa*. **LIMACODIDAE**: *Prolimacodes badia*. **GEOMETRIDAE**: *Euchlaena madusaria, E. amoenaria, Nemoria saturiba, N. elfa, Rheumaptera prunivorata* (COUNTY, far south), *Idaea micropterata, Scopula timandrata*. **SATURNIIDAE**: *Callosamia securifera*. **NOTODONTIDAE**: *Baltodonta broui* (COUNTY). **EREBIDAE**: *Virbia laeta, Apantesis phalerata, A. vittata, Idia julia, I. majoralis, Zanclognatha obscuripennis, Metalectra tantillus, Sigela eoides, Zale horrida, Z. submediana*. **NOCTUIDAE**: *Acronicta connecta*.
Oct. 15-16, 2021:
TORTRICIDAE: *Thaumatographa jonesi*. **GEOMETRIDAE**: *Cymatophora approximaria*. **EREBIDAE**: *Clemensia ochreata, Phytometra rhodarialis, Eublemma minima, Epidromia rotundata, Argyrostrotis deleta*. **NOCTUIDAE**: *Panthea furcilla, Xestia dilucida*.
Dec. 17-18, 2021:
GEOMETRIDAE: *Leptostales pannaria*. **EREBIDAE**: *Mocis disseverans*. **NOCTUIDAE**: *Panthea furcilla, Callopistria floridensis, Metaxaglaea viatica, Chaetaglaea tremula, C. rhonda, C. sericea*.
Jan. 1-2, 2022:
CRAMBIDAE: *Diacme adipaloides, Diasemiodes janassalis, Parapoynx allionalis*. **GEOMETRIDAE**: *Digramma eremiata, Macaria aequiferaria, Macaria distribuaria, Besma quercivoraria, Pero ancetaria Prochoerodes lineola, Nemoria saturiba, N. elfa, Phigalia denticulata, Lobocleta ossularia*

LASIOCAMPIDAE: *Artace cribrarius.* **NOTODONTIDAE**: *Cecrita guttivitta, Symmerista albifrons.* **EREBIDAE**: *Cisthene subjecta, C. packardii, Clemensia ochreata, Utetheisa ornatrix, Lascoria ambigualis, Selenisa sueroides, Zale squamularis.* **NOLIDAE**: *Meganola georgei* (COUNTY). **EUTELIIDAE**: *Paectes abrostoloides.* **NOCTUIDAE**: *Ctenoplusia oxygramma, Feralia major, Chaetaglaea tremula, C. sericea, Sunira bicolorago, Condica mobilis, Spodoptera eridania, Spodoptera ornithgalli, Elaphria chalcedonia, E. versicolor, E. exesa, E.nucicolora, Phosphila turbulenta, Properigea tapeta, Leucania extincta, Leucania incognita, Agrotis vetusta, Anicla infecta.*

Feb. 22-23:

GEOMETRIDAE: *Cladara limitaria, Lycia ipsilon, Glena cognataria.* **LASIOCAMPIDAE**: *Phyllodesma occidentis.* **EREBIDAE**: *Clemensia ochreata, Pseudanthracia coracias, Zale squamularis.* **NOLIDAE**: *Meganola clethrae, M. georgei* (COUNTY). **NOCTUIDAE**: *Metaxaglaea australis, Orthosia alurina,*

Hazlehurst, Jeff Davis Co., Dec. 28 (at the Huddle House), with Lance Durden:

NOCTUIDAE: *Feralia major* (several).

Alligator Creek WMA, Wheeler Co.:

Dec. 28-29, with Lance Durden:

GEOMETRIDAE: *Scopula lautaria, Macaria varadaria.* **EREBIDAE**: *Zale aeruginosa.* **NOCTUIDAE**: *Condica claufacta, Metaxaglaea viatica, M. australis.*

Feb. 24-25, Lance Durden:

PSYCHIDAE: *Oiketicus abbotii, Thyridiopteryx ephemeraeformis.* **GEOMETRIDAE**: *Nemoria outina, Iridopsis pergracilis, Hypomecis buchholzaria, Stenaspilatodes antidiscaria Tacparia zalissaria.* **EREBIDAE**: *Sigela brauneata, Zale perculta* (early). **NOLIDAE**: *Afrida ydatodes.* **NOCTUIDAE**: *Psaphida styracis, Feltia manifesta.*

Townsend WMA North, Long Co.:

Dec. 26-28, with Lance Durden:

GELECHIIDAE: *Aroga compositella.* **URODIDAE**: *Urodus parvula.* **CRAMBIDAE**: *Elophila obliteralis, Elophila gyralis, Uresephita reversalis, Palpita magniferalis.* **LASIOCAMPIDAE**: *Tolype notialis, Artace cribraria.* **GEOMETRIDAE**: *Hydriomena sp., Pleuroprucha insulsaria, Eupithecia miserulata, Nemoria lixaria, N. bifilata, N. catochloa, Synchlora frondaria, Macaria aemulataria, M. aequiferaria, M. distribuaria, Iridopsis defectaria, I. vellivolata, I. pergracilis, Protoboarmia porcelaria, Ectropis crepuscularia, Paleacrita merriccata* (COUNTY record), *Ilexia intractata, Besma quercivoraria, Lambdina pultaria, Prochoerodes lineola, Eutrapela clemataria.* **NOTODONTIDAE**: *Cecrita guttivitta, Coelodasys unicornis, Symmerista albifrons.* **EREBIDAE**: *Orgyria definita, Cisthene subjecta, Clemensia ochreata, Hyphantria cunea, Idia americalis, I. aemula, Lascoria ambigualis, Hypena scabra, Sigela rosea* (COUNTY record), *Cissusa spadix, Epidromia rotundata, Zale submediana.* **NOLIDAE**: *Meganola georgei* (COUNTY record). **NOCTUIDAE**: *Acronicta brumosa, Feralia major, Condica vecors, C. videns, C. cupentia, Elaphria nucicolora, Phosphila turbulenta, Iodopepla u-album, Galgula partita, Metaxaglaea violacea, M. viatica, M. australis, Chaetaglaea tremula, C. rhonda, C. sericea, Epiglaea apiata, Sericaglaea signata, Egira alternans, Leucania pilipalpis* (COUNTY record, second location in STATE), *L. incognita, Xestia elimata, X. dilucida.*

March 6-7:

DEPRESSARIIDAE: *Pseuderotis obiterella.* **GEOMETRIDAE**: *Nemoria elfa, Hypomecis buchholzria, Iridopsis pergracilis, I. ephyraria.* **APATELODIDAE**: *Olceclostera indistincta.* **SPHINGIDAE**: *Amphion floridensis.* **NOTODONTIDAE**: *Clostera inclusa.* **EREBIDAE**: *Hypenodes franclemonti, Sigela brauneata, Gondysia smithii, G. consobrina, Drasteria graphica, Cutina aluticolor, C. arcuata, C. distincta, Hyperstrotia aetheria.* **NOLIDAE**: *Meganola georgei, M. minuscula, M. phylla, M. spodia, Nola clethrae, N. triquetrana, Afrida ydatodes.* **NOCTUIDAE**: *Ozarba nebula* (COUNTY), *Acronicta morula, A. betulae, Polygrammate cadburyi, Feltia manifesta.*

Kittles Island, McIntosh Co., Feb. 25, John Hyatt:

NOCTUIDAE: *Condica claufacta, Psaphida styracis, Metaxaglaea australis, Leucania subpunctata, L. pilipalpis.*

Brunswick, Glynn Co., Mike Chapman:
CRAMBIDAE: *Nymphuliella daeckealis*, Aug. 21, 2021 (COUNTY, *see photo*). **EREBIDAE**: *Sigela basipunctaria*, March 10 (COUNTY), *Antiblemma perva*, Jan. 1 (STATE record, *see photo*). **NOLIDAE**: *Afrida ydatodes*, March 9 (COUNTY).

Antiblemma perva

Nymphuliella daeckealis

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

North Carolina: Harry LeGrand, 1109 Nichols Drive, Raleigh, NC 27605, E-Mail: hlegrandjr@gmail.com

Harry sends in the following report: WINTER BUTTERFLY RECORDS FOR NORTH CAROLINA– 2021-22.
Records are from November 11, 2021, through February 2022. Names in parentheses are counties.

November was not overly warm, but much of December was abnormally quite warm, including as late as December 25-26, when a handful of butterflies were seen well inland. January and much of February were close to normal in temperature, though late February was warmer than usual, with many people getting afield and finding butterflies late in the month, even in the mountains.

PAPILIONIDAE:
Papilio polyxenes, the latest ever for the Piedmont was an adult seen by Loretta Lutman in her Asheboro (Randolph) yard on December 26. She saw another or the same one there on January 6.

LYCAENIDAE:
Atlides halesus, remarkably late, and a first December state record, was one seen by Bob Cavanaugh in his Newport (Carteret) yard on December 26!

Parrhasius m-album, quite late was one seen by Harry LeGrand in Raleigh (Wake) on November 11, becoming the latest date ever for the species in the state.

NYMPHALIDAE:
Nymphalis antiopa, there were five state reports in February (and many more in early March); this is a better than usual amount of late winter observations of this semi-hibernating species.

Vanessa cardui, the latest report for the 2021 season was one photographed by Maureen O'Halloran in Southern Pines (Moore) on November 12. The species was q quite uncommon in the state this past year.

HESPERIIDAE:

Burnsius communis, Richard Stickney saw a very late one at the Raulston Arboretum in Raleigh (Wake) on December 25; who would have thought an arboretum would have been open on Christmas Day?!

Hylephila phyleus, likely the latest ever Piedmont report was one seen by Richard Stickney at Raulston Arboretumin Raleigh, on December 25.

Lerema accius, one of the few state records for December was one seen by K.B. Richardson at Mackay Island National Wildlife Refuge (Currituck) on December 4.

Copaeodes minima, rather late was one noted in Southern Pines (Moore) on November 11, as photographed by Maureen O'Halloran.

Panoquina ocola, there were a handful of sightings after November 10, with the latest being one seen by Matthew Shaynak at Raleigh (Wake) on November 17.

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

Brian sends in the following state report:

LEPIDOPTERA RECORDS – FEBRUARY 2022

Brian Scholtens, all on Spring Island, SC

Tischeriidae:

Coptotriche aenea?; Rich house, 11 Jun 2021 (State record)
Coptotriche sp. 1; Rich house, 16-17 Apr 2021, 15 May 2021, 11 Jun 2021
Coptotriche sp. 2; Rich house, 11 Jun 2021

Tineidae:

Homosetia argentinotella; Rich house, 16 Oct 2021 (county record)
Homosetia marginimaculella; Colleton Ravine, 11 Jun 2021 (State record)

Gracillariiae:

Caloptilia azaleella; Rich house, 27 Feb 2021, 12 Mar 2021 (county record)
Caloptilia rhoifoliella; Rich house, Bigneck, Colleton Ravine, 12-13 Mar 2021 (county record)
Caloptilia stigmatella; Rich house, 27 Feb 2021 (county record)
Neurobathra strigifinitella; Rich house, 16 Oct 2021 (county record)
Cameraria ulmella; Rich house, 17 Oct 2021 (county record)

Yponomeutidae:

Zelleria retiniella; Rich house, 11 Jun 2021 (county record)

Argyresthiidae:

Argyresthia subreticulata; Rich house, 17 Apr 2021, 14 May 2021 (county record)

Autostichidae:

Gerdana caritella; Rich house, 17 Apr 2021 (county record)
Taygete gallaegenitella; Rich house, 15 May 2021, 11 Jun 2021, 13 Aug 2021 (county record)

Cosmopterigidae:

Cosmopterix clemensella; Rich house, 25 Sep 2021 (State record)
Euclemensia bassettella; Rich house, 11 Jun 2021 (county record)
Perimede erransella; Rich house, 17 Apr 2021 (county record)

Gelechiidae:

Aporaerema adversa; Bigneck, 12 Mar 2021; Duck ponds, 13 Mar 2021; Rich house 16 Oct 2021 (State record)
Untomia albistrigella; Bigneck, 17 Apr 2021 (county record)
Isophrictis similiella; Bigneck, 26 Sep 2021 (county record)

Monochroa absconditella; Bigneck, 17 Apr 2021 (county record)
Monochroa quinquepunctella; fields, 12 Mar 2021 (county record)
Stereomita andropogonis; Rich house, 25 Sep 2021; Bigneck, 26 Sep 2021 (county record)
Aristotelia ivae; Trillium Gardens, 11 Jun 2021 (State record)
Coleotechnites florae; Rich house, 12 Mar 2021, 14-15 May 2021 (county record)
Sinoe chambersi; Rich house, 12 Mar 2021 (county record)
Pseudotelphusa palliderosacella; Colleton Ravine, 11 Jun 2021 (State record)
Fascista bimaculella; Rich house, 25 Sep 2021 (State record)
Gnorimoschema gallaesolidaginis; Covey Rise, 10 Dec 2021 (county record)

Batrachedridae:

Homaledra knudsoni; Rich house, 25 Sep 2021 (State record)

Stathmopodidae:

Stathmopoda aenea; Rich house, 11 Jun 2021 (State record)

Momphidae:

Mompha eloisella; Rich house, 11 Jun 2021 (county record)

Pterophoridae:

Lioptilodes albistriolatus; Covey Rise, 11 Nov 2021; Bigneck, 11 Nov 2021 (county record)
Stenoptilia pallistriga; Colleton Ravine, 11 Jun 2021 (State record)

Tortricidae:

Aethes ca. seriatana; Rich house, 15 May 2021, Bigneck, 17 Apr 2021 (county record)
Cochylichroa temerana; Chaffin house, 10 Oct 2020, Rich house, 16 Oct 2021 (State record)
Argyrotaenia kimballi; Bigneck, 26 Sep 2021 (county record)
Archips georgiana; Rich house, 14 May 2021 (county record)
Archips grisea; Rich house, 14 May 2021 (county record)
Coelostathma discopunctana; Rich house, 16 Apr 2021 (county record)
Sparganothis bistriata; Bigneck, 26 Sep 2021 (county record)
Bactra furfurana; Duck ponds, 11 Jun 2021 (county record)
Bactra maiorina; Bigneck, 17 Apr 2021 (county record)
Episimus argutana; Rich house, 11 Jun 2021, 14 Aug 2021; Covey Rise, 17 Apr 2021 (county record)
Phaecasiophora niveiguttana; Colleton Ravine, 17 Apr 2021 (county record)
Olethreutes furfuranum; Bigneck, 17 Apr 2021; Covey Rise, 17 Apr 2021 (county record)
Olethreutes tilianum; Trillium Gardens, 11 Jun 2021 (State record)
Olethreutes exaeresimum; Covey Rise, 17 Apr 2021; Colleton Ravine, 17 Apr 2021 (county record)
Ancylis divisana; Rich house, 16 Oct 2021 (county record)
Eucosma raracana; Rich house, 25 Sep 2021 (county record)
Pelochrista gomonana; Covey Rise, 27 Feb 2021, 12 Mar 2021; Rich house, 27 Feb 2021, 12 Mar 2021; Bigneck, 12 Mar 2021; Duck ponds, 13 Mar 2021; Colleton Ravine, 13 Mar 2021 (county record)
Epiblema minutana; Bigneck, 17 Apr 2021; Covey Rise, 17 Apr 2021 (county record)
Epiblema abruptana; Rich house, 13 Aug 2021; Bigneck, 26 Sep 2021, 11 Nov 2021; Duck ponds, 11 Jun 2021; Covey Rise, 17 Apr 2021 (county record)
Epiblema scudderiana; Bigneck, 17 Apr 2021 (county record)
Epiblema otiosana; Duck ponds, 11 Jun 2021 (county record)
Proteoteras implicata; Trillium Gardens, 11 Jun 2021, 17 Oct 2021 (State record)
Crocidosema perplexana; Rich house, 25 Sep 2021 (State record)
Corticivora parva; Rich house, 16 Oct 2021; Bigneck, 17 Apr 2021 (county record)

Cossidae:

Givira francesca; Rich house, 11 Jun 2021 (county record)

Pyralidae:

Tosale oviplagalis; Colleton Ravine, 17 Apr 2021 (county record)
Arta olivais
Arta nov. sp.

Aglossa disciferalis; Rich house, 11 Jun 2021, 13 Aug 2021 (county record)
Acrobasis vaccinii; Rich house, 15 May 2021 (county record)
Acrobasis tumidulella; Colleton Ravine, 11 Jun 2021 (county record) – formerly *A. kearfottella*
Acrobasis rubrifasciella; Trillium Gardens, 11 Jun 2021 (county record)
Euzophera ostricolorella; Colleton Ravine, 17 Apr 2021 (county record)
Moodna pallidostrinella; Rich house, 17 Apr 2021, 16 Oct 2021 (county record)
Varneria atrifasciella; Rich house, 16 Oct 2021 (county record)
Eurythmia hospitella; Rich house, 14 May 2021, 14 Aug 2021; Bigneck, 26 Sep 2021 (county record)
Salebriaria squamopalpiella; Rich house, 15 May 2021, 14 Aug 2021 (county record)
Salebriaria pumilella; Duck ponds, 11 Jun 2021 (county record)
Anadelosemia texanella; Rich house, 12 Mar 2021 (county record)
Atheloca subrufella; Rich house, 25 Sep 2021, 16 Oct 2021, 11 Dec 2021 (State record)
Laetilia coccidivora; Rich house, 13 Aug 2021, 10 Dec 2021 (county record)
Homoeosoma electella; Duck ponds, 11 Jun 2021 (county record)
Homoeosoma ammonastes; Rich house, 11 Jun 2021; Duck ponds, 11 Jun 2021; Trillium Gardens, 11 Jun 2021 (State record)
Goya stictella; Duck ponds, 11 Jun 2021 (State record)

Crambidae:

Elophila faulalis; Rich house, 11 Nov 2021 (county record)
Elophia tinealis; Colleton Ravine, 11 Jun 2021 (county record)
Chrysendeton kimballi; Bigneck, 26 Sep 2021; Duck ponds, 11 Jun 2021 (county record)
Haimbachia squamulellus; Bigneck, 17 Apr 2021 (county record)
Chilo erianthalis; Duck ponds, 11 Jun 2021 (county record)
Chilo demotellus; Trillium Gardens, 11 Jun 2021 (county record)
Diatraea evanescens; Duck ponds, 11 Jun 2021; Trillium Gardens, 11 Jun 2021 (county record)
Diatraea lisetta; Bigneck, 17 Apr 2021 (county record)
Microcrambus minor; Bigneck, 26 Sep 2021; Covey Rise, 17 Apr 2021 (county record)
Raphiptera argillaceellus; Rich house, 25 Sep 2021, 16 Oct 2021; Bigneck, 26 Sep 2021; fields, 11 Nov 2021; Covey Rise, 17 Apr 2021 (county record)
Scoparia dominicki; Rich house, 16-17 Apr 2021; Colleton Ravine, 11 Jun 2021 (county record)
Glaphyria glaphyralis; Rich house, 11 Jun 2021, 13 Aug 2021 (county record)
Lipocosmodes fuliginosalis; Colleton Ravine, 11 Jun 2021 (county record)
Diasemiodes nigralis; Trillium Gardens, 11 Jun 2021 (county record)
Samea ecclesialis; Rich house, 11 Dec 2021 (county record)
Syngamia florella; Covey Rise, 25 Sep 2021; Rich house, 17 Oct 2021, 11 Nov 2021 (county record)
Ostrinia penitalis; Rich house, 18 Apr 2021; Duck ponds, 11 Jun 2021 (county record)
Hahncappsia mancalis; Rich house, 15 May 2021 (county record)
Pyrausta bicoloralis; Bigneck, 26 Sep 2021 (county record)
Pyrausta laticlavia; fields, 12 Mar 2021 (county record)

Mimallonidae:

Lacosoma chiridota; Rich house, 11 Jun 2021 (county record)
Cicinnus melsheimeri; Colleton Ravine, 17 Apr 2021 (county record)

Saturniidae:

Hyalophora cecropia; Bigneck, 17 Apr 2021 (county record)

Geometridae:

Eubaphe meridiana; Rich house, 16 Oct 2021 (county record)
Eupithecia palpata; Rich house, 26 Feb 2021 (State record)
Eupithecia jejunata; Rich house, 12 Mar 2021 (county record)
Eupithecia broui; Rich house, 12 Mar 2021 (State record)
Eupithecia swetti; Rich house, 26-28 Feb 2021, 12 Mar 2021; Colleton Ravine,13Mar 2021 (county record)
Lobocleta ossularia; Rich house, 13 Aug 2021, 16 Oct 2021; Bigneck, 11 Nov 2021 (county record)
Idaea hilliata; Rich house, 13 Aug 2021 (county record)

Idaea micropterata; Colleton Ravine, 11 Jun 2021 (county record)
Idaea tacturata; Rich house, 14 May 2021, 25 Sep 2021, 16-17 Oct 2021 (county record)
Scopula lautaria; Rich house, 10 Dec 2021 (county record)
Alsophila pometaria; Rich house, 27 Feb 2021 (county record)
Nematocampa baggettaria; Duck ponds, 11 Jun 2021 (county record)
Macaria varadaria; Trillium Gardens, 11 Jun 2021; Bigneck, 10 Dec 2021 (county record)
Hypomecis gnopharia; Rich house, 11 Jun 2021 (county record)
Tornos scolopacinaria; Bigneck, 27 Feb 2021 (county record)
Pero zalissaria; Bigneck, 27 Feb 2021, 12 Mar 2021, 17 Apr 2021, 10 Dec 2021; Duck ponds, 11 Jun 2021 (county record)
Metarranthis angularia; Colleton Ravine, 17 Apr 2021 (county record)

Notodontidae:

Datana integerrima; Trillium Gardens, 11 Jun 2021 (county record)
Heterocampa astarte; Rich house, 18 Apr 2021, 11 Jun 2021 (county record)
Schizura concinna; Rich house, 11 Jun 2021 (county record)

Erebidae:

Virbia immaculata; Rich house, 11 Jun 2021, 14 Aug 2021 (county record)
Bleptina sangamonia: Rich house, 17 Apr 2021 (county record)
Hypena manalis; Trillium Gardens, 11 Jun 2021 (county record)
Hypena sordidula; Trillium Gardens, 11 Jun 2021 (county record)
Arugisa lutea; Colleton Ravine, 11 Jun 2021 (county record)
Arugisa latiorella; Covey Rise, 17 Apr 2021 (county record)
Gabara distema; Rich house, 14 Aug 2021 (county record)
Ablemma brimleyana; Rich house, 15 May 2021, 25 Sep 2021 (county record)
Sigela brauneata; Rich house, 25 Sep 2021 (county record)
Oruza albocostaliata; Rich house, 11 Jun 2021 (county record)
Eublemma minima; Rich house, 25 Sep 2021, 16 Oct 2021; Bigneck, 26 Sep 2021 (county record)
Catocala muliercula; Rich house, 11 Jun 2021; Trillium Gardens, 11 Jun 2021 (county record)
Catocala ultronia; Colleton Ravine, 11 Jun 2021; Trillium Gardens, 11 Jun 2021 (county record)
Catocala andromedae; Trillium Gardens, 11 Jun 2021 (county record)
Argyrostrotis sylvarum; Covey Rise, 17 Apr 2021 (county record)

Nolidae:

Nola clethrae; Rich house, 14 Aug 2021 (county record)

Noctuidae:

Amyna bullula; Bigneck, 26 Sep 2021 (county record)
Deltote bellicula; Duck ponds, 11 Jun 2021 (county record)
Ozarba aeria; Rich house, 11 Jun 2021 (county record)
Acronicta tritona; Rich house, 18 Apr 2021; Covey Rise, 17 Apr 2021 (county record)
Acronicta longa; Rich house, 12 Mar 2021 (county record)
Homophobera apicosa; Duck ponds, 11 Jun 2021; Colleton Ravine, 17 Apr 2021 (county record)
Schinia siren; Covey Rise, 25 Sep 2021 (county record)
Schinia trifascia; Rich house, 25 Sep 2021 (county record)
Acherdoa ferraria; Trillium Gardens, 11 Jun 2021 (county record)
Chytonix palliatricula; Rich house, 17-18 Apr 2021 (county record)
Parapamea buffaloensis; Duck ponds, 11 Jun 2021 (county record)
Chaetaglaea tremula; Covey Rise, 10 Dec 2021 (county record)
Morrisonia triangula; Colleton Ravine, 17 Apr 2021 (county record)
Leucania scirpicola; Colleton Ravine, 11 Jun 2021; Covey Rise, 17 Apr 2021, 10 Dec 2021 (county record)

R. Clement – Santee NWR Visitors Center, Jasper Co., SC, 9/4/20

Nymphalidae:

Hermeuptychia intricata (county record)

Lois Stacey – Thurmond Lake Visitors Center, McCormick Co., SC, 6/27/21

Hesperiidae:

Burnsius oileus (county record)

Ken Carman – ca. Calhoun Falls State Park, Abbeville Co., SC, 8/25/21

Hesperiidae:

Problema byssus (county record)

Ken Carman – ca. Calhoun Falls State Park, Abbeville Co., SC, 9/1/21

Hesperiidae:

Wallengrenia egeremet (county record)

J. Grego – Congaree NP, Richland Co., SC, 9/18/21

Hesperiidae:

Wallengrenia egeremet (county record)
Euphyes dion (county record)

Marty & Dave Kastner - Santee State Park, Orangeburg County, SC, 10/23/21

Pieridae:

Abaeis nicippe
Phoebis sennae

Nymphalidae:

Dione incarnata
Polygonia sp.
Junonia coenia
Lethe anthedon

Hesperiidae:

Urbanus proteus
Burnsius albescens
Burnsius oileus
Ancyloxypha numitor
Atalopedes campestris
Lerema accius
Panoquina ocola

Marty & Dave Kastner - Congaree National Park, Richland County, SC, 10/26/21

Pieridae:

Abaeis nicippe
Pyrisitia lisa

Lycaenidae:

Celastrina neglecta

Nymphalidae:

Dione incarnata
Phyciodes tharos
Heliconius charithonius
Polygonia interrogationis
Libytheana carinenta
Junonia coenia
Hermeuptychia sp.
Lethe anthedon
Danaus plexippus

Hesperiidae:

Burnsius albescens
Burnsius oileus

Hylephila phyeus
Atalopedes campestris
Euphyes vestris
Lerema accius
Poanes zabulon
Panoquina ocola

Dennis Forsythe – Pinckney Park, James Island, SC, 10/29/21

Pieridae:
Pyrisitia lisa
Phoebis sennae
Lycaenidae:
Leptotes cassius
Nymphalidae:
Heliconius charithonius
Dione incarnata
Junonia coenia
Hesperiidae:
Urbanus proteus
Hylephila phyleus
Panoquina ocola

Dennis Forsythe – Beachwalker Park, Kiawah Island, SC, 11/1/21

Papilionidae:
Papilio palamedes
Pieridae:
Pyrisitia lisa
Phoebis sennae
Nymphalidae:
Heliconius charitonius
Dione incarnata
Danaus plexippus
Hesperiidae:
Urbanus proteus
Panoquina ocola

Marty & Dave Kastner - Wateree River HP and WMA, Eastover, SC, 10/31/21

Pieridae:
Phoebis sennae
Abaeis nicippe
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia interrogationis
Polygonia comma
Vanessa cardui
Junonia coenia
Limenitis Archippus
Libytheana carinenta
Hermeuptychia sp.
Danaus plexippus

Hesperiidae:

Urbanus proteus
Burnsius albescens
Burnsius oileus
Hylephila phyleus
Euphyes vestris
Lerema accius
Panoquina ocola

Dennis Forsythe – Fort Johnson, James Island, SC, 11/4/21

Pieridae:

Pyrisitia lisa
Colias eurytheme

Lycaenidae:

Calycopis cecrops

Nymphalidae:

Dione incarnata
Junonia coenia
Danaus plexippus

Hesperiidae:

Urbanus proteus
Hylephila phyleus
Panoquina ocola

Dave & Marty Kastner, Allison Smith - Timmerman Trail and Old State Road, Cayce, SC, 11/9/21

Pieridae:

Phoebis sennae
Abaeis nicippe

Nymphalidae:

Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia interrogationis
Vanessa virginiensis
Junonia coenia
Limenitis archippus
Danaus plexippus

Hesperiidae:

Urbanus proteus
Burnsius albescens
Burnsius oileus
Hylephila phyleus
Euphyes vestris
Lerema accius
Panoquina ocola

Dennis Forsythe – several locations, 11/12/21
Demetre Park, James Island, SC

Pieridae:

Phoebis sennae
Pyrisitia lisa

Nymphalidae:

Dione incarnata
Junonia coenia

Eastwood Subdivision, James Island, SC

Nymphalidae:

Vanessa atalanta

Hampton Park, Charleston, SC

Lycaenidae:

Leptotes cassius

Nymphalidae:

Dione incarnata
Danaus plexippus

Hesperiidae:

Hylephila phyleus
Panoquina ocola

Fort Johnson, James Island, SC

Nymphalidae:

Dione incarnata

Hesperiidae:

Urbanus proteus
Panoquina ocola

Dennis & Donna Forsythe – <u>several locations</u>, 11/18/21

Demetre Park, James Island, SC

Pieridae:

Pyrisitia lisa
Phoebis senna

Nymphalidae:

Dione incarnata
Vanessa cardui
Junonia coenia

Fort Johnson, James Island, SC

Nymphalidae:

Dione incarnata
Danaus plexippus

Hesperiidae:

Urbanus proteus

Pinckney Park, James Island, SC

Pieridae:

Pyrisitia lisa

Nymphalidae:

Dione incarnata
Junonia coenia
Danaus plexippus

Hesperiidae:

Urbanus proteus
Burnsius oileus

Holy Cross Cemetery, James Island, SC

Hesperiidae:

Hylephila phyleus

Dave & Marty Kastner, Wateree River HP and WMA, Eastover, SC, 11/17/21

Papilionidae:

Papilio palamedes (larva on redbay)

Pieridae:

Phoebis sennae
Abaeis nicippe
Pyrisitia lisa
Zerene cesonia
Pieris rapae

Nymphalidae:

Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia comma
Junonia coenia
Danaus plexippus

Hesperiidae:

Urbanus proteus
Burnsius albescens
Hylephila phyleus
Panoquina ocola

Mike Turner – Bland Tract, Manchester St. Forest, Wedgefield, SC, 11/26/21

Pieridae:

Abaeis nicippe
Phoebis sennae
Pieris rapae

Nymphalidae:

Dione incarnata
Euptoeita claudia
Polygonia interrogationis
Vanessa virginiensis
Junonia coenia

Hesperiidae:

Burnsius sp.
Hylephila phyleus
Panoquina ocola

Dennis Forsythe – <u>several locations</u>, 12/2/21
Holy Cross Cemetery, James Island, SC

Pieridae:

Pyrisitia lisa
Phoebis sennae

Hesperiidae:

Dione incarnata
Junonia coenia

Pinckney Park, James Island, SC

Pieridae:

Pyrisitia lisa
Phoebis sennae

Nymphalidae:

Heliconius charithonius

Dione incarnata
Junonia coenia
Danaus plexippus

Hesperiidae:

Urbanus proteus
Panoquina ocola

Fort Johnson, James Island, SC

Pieridae:

Phoebis sennae

Nymphalidae:

Dione incarnata
Junonia coenia

Hesperiidae:

Panoquina ocola

Dave & Marty Kastner - Wateree River HP and WMA, Eastover, SC, 12/3/21

Pieridae:

Phoebis sennae
Abaeis nicippe
Pyrisitia lisa
Zerene cesonia
Pieris rapae

Nymphalidae:

Dione incarnata
Euptoieta claudia
Junonia coenia

Hesperiidae:

Burnsius albscens
Burnsius oileus
Hylephila phyleus

Dennis Forsythe, Garden City Beach, SC, 12/30/21

Pieridae:

Phoebis sennae
Pyrisitia lisa

Nymphalidae:

Dione incarnata

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

John sent in the following note on January 12, 2022:

Knoxville, Knox Co., TN, Jan. 1, 2022: *Phoebis sennae eubule*, reported by D. C. Baker. Either very late, or very early record!

Texas: Terry Doyle, 13310 Bar C Drive, San Antonio, TX 782253, E-Mail: tdoyle335@yahoo.com
Stuart Marcus, P.O. Box 463 Liberty, TX 77575, E-Mail: stuartmarcus13@gmail.com

Terry sends in the following report for the 1st quarter of 2022, and comments:

The state remains in drought as a percentage of 91% with extreme conditions in western counties. Lower Rio Grande and eastern counties have received some relief from spotty showers. iNaturalist observation records show normal emergence in and invasions for butterflies and moths. Species numbers are improving. Monarchs are passing through or emerging with high numbers in Harris County, upper coast and Edwards plateau in late January and early February. Red Admiral has exploded statewide. Notable observances for El Paso County: Marina Checkerspot (1), 25 January, 2022, a New County Record and West Coast Lady (1), 7 February, 2022. Bexar County: Yellow Angled Sulphur, (1), Mexican Yellow, (1), 17 January, 2022, Botanical Center.

>>

Stuart sends in the following report:

Moths for Trinity River National Wildlife Refuge (TRNWR)

Liberty County, Texas
Nov 1, 2021 through Jan 31, 2022
Stuart.marcus13@gmail.com

Most of Texas saw record high temperatures during the month of December. This was refelected in the number of moths seen during that moth. During the past 10 years of photographing moths from the same sheet, 79 species was the highest number I had seen, but in Dember 2021, that was eclipsed by a new record of 118 species.

ATTEVIDAE
Atteva aurea Nov, Dec

BLASTOBASIDAE
Hypatopa punctiferella Dec

BUCCULATRICIDAE
Bucculatrix angustata Dec

COSMOPTERIGIDAE
Anatrachyntis sp. Dec
Cosmopterix sp. Nov

CRAMBIDAE
Argyria lacteella Nov, Dec, Jan
Diastictis fracturalis Nov
Diatraea lisetta Nov, Dec
Dicymolomia julianalis Dec
Donacaula sp. Nov, Dec
Elophila gyralis Nov
Elophila obliteralis Nov, Dec, Jan
Elophila tinealis Dec
Eoreuma densellus Nov
Epipagis fenestralis Nov
Euchromius ocellea Nov
Eudonia strigalis Nov
Fissicrambus sp. Nov, Dec, Jan
Herpetogramma bipunctalis Nov
Herpetogramma phaeopteralis Nov, Dec, Jan
Hymenia perspectalis Dec
Lineodes interrupta Nov
Marasmia cochrusalis Nov
Microcrambus biguttellus Nov
Nomophila nearctica Nov, Dec, Jan
Omiodes indicata Dec
Parapoynx allionealis Nov, Dec
Patania silicalis Dec
Pilocrocis ramentalis Nov, Dec
Pyrausta acrionalis Dec
Pyrausta tyralis Nov, Dec
Samea ecclesialis Nov, Dec
Samea multiplicalis Nov, Dec, Jan
Spoladea recurvalis Nov, Dec
Syngamia florella Nov, Dec
Udea rubigalis Nov, Dec
Urola nivalis Nov, Dec, Jan

ELACHISTIDAE
Elachista sp. Dec

EREBIDAE
Apantesis phalerata Nov, Jan
Caenurgia chloropha Nov, Dec, Jan
Catocala maestosa Nov
Cisseps fulvicollis Nov, Dec
Clemensia ochreata Nov
Cosmosoma myrodora Nov, Dec
Crambidia pallida Nov, Dec
Eublemma recta Dec
Halysidota sp. Dec
Hemeroplanis floccalis Nov
Hypena degesalis Dec
Hypena minualis Dec
Hypena scabra Nov, Dec
Hyphantria cunea Dec
Idia aemula Nov
Idia americalis Dec
Melipotis cellaris Nov, Dec
Mocis marcida Nov, Dec, Jan
Ommatochila mundula Nov
Orgyia leucostigma Dec
Pagara simplex Dec

Palthis asopialis Nov
Pyrrharctia isabella Jan
Schrankia macula Nov, Dec
Selenisa sueroides Dec
Tetanolita floridana Nov
Tetanolita mynesalis Nov, Dec, Jan
Utetheisa ornatrix Jan
Zale lunata Nov

GELECHIIDAE
Anacampsis fullonella Nov, Dec
Aproaerema sp. Dec
Aristotelia corallina complex Nov
Aristotelia elegantella Nov
Chionodes discoocellella Nov, Dec, Jan
Dichomeris ligulella Jan
Gnorimoschema sp. Dec
Neodactylota sp. (Possibly) Dec

GEOMETRIDAE
Costaconvexa centrostrigaria Dec
Eubaphe unicolor Nov
Eulithis diversilineata Complex Dec
Eupithecia miserulata Nov, Dec, Jan
Eusarca confusaria Nov
Glenoides texanaria Nov
Ilexia intractata Dec
Iridopsis defectaria Dec, Jan
Leptostales pannaria Nov, Dec, Jan
Lobocleta ossularia Dec
Macaria aequiferaria Dec
Melanochroia chephise Dec
Nemoria elfa Nov, Dec
Nemoria lixaria Dec
Orthonama obstipata Dec
Patalene olyzonaria Nov
Phigalia denticulata Jan
Pleuroprucha insulsaria Nov, Jan
Scopula compensata Dec
Synchlora frondaria Nov, Jan
Tornos scolopacinaria Nov, Dec

LASIOCAMPIDAE
Artace cribrarius Nov, Dec

MOMPHIDAE
Mompha cephalonthiella Nov, Dec
Mompha rufocristatella Nov

NOCTUIDAE
Agrotis ipsilon Nov
Amyna stricta Dec
Anicla infecta Nov
Choephora fungorum Dec
Chrysodeixis includens Nov, Jan
Condica confederate Nov
Condica sutor Nov
Condica videns Nov, Jan
Ctenoplusia oxygramma Nov, Dec
Cydosia aurivitta Nov
Elaphria chalcedonia Nov
Enigmogramma basigera Nov, Dec
Feralia major Dec
Galgula partita Nov, Dec, Jan
Leucania adjuta Dec
Leucania incognita Nov, Dec, Jan
Metaxaglaea viatica Dec
Micrathetis triplex Nov, Dec
Mythimna unipuncta Nov, Dec
Panthea furcilla Dec
Rachiplusia ou Dec
Schinia arcigera Nov
Spodoptera dolichos Dec
Spodoptera eridania Dec
Spodoptera frugiperda Dec
Spodoptera latifascia Dec
Spodoptera ornithogalli Jan

NOLIDAE
Afrida ydatodes Nov, Dec, Jan
Garella nilotica Jan

NOTODONTIDAE
Clostera inclusa Dec
Symmerista albifrons Jan

PLUTELLIDAE
Plutella xylostella Nov, Dec, Jan

PTEROPHORIDAE
Lioptilodes albistriolatus Nov, Dec, Jan
Pselnophorus belfragei Nov, Dec
Sphenarches anisodactylus Nov
Stenoptilia sp. Dec
Stenoptilodes sp. Nov, Dec

PYRALIDAE
Acrobasis sp. Dec
Atheloca subrufella Dec
Ephestiodes gilvescentella Nov
Eulogia ochrifrontella Dec
Homoeosoma electella Nov, Jan
Honora mellinella Dec
Hypsopygia binodulalis Dec
Hypsopygia nostralis Nov, Dec
Laetilia coccidivora Nov
Macrorrhinia endonephele Nov, Dec
Moodna ostrinella Nov
Phycitodes reliquellum Nov, Dec
Tallula atrifascialis Nov, Dec

SATURNIIDAE
Antheraea polyphemus Nov

SCHRECKENSTEINIIDAE
Schreckensteinia erythriella Dec

SPHINGIDAE
Enyo lugubris Dec, Jan
Erinnyis ello Dec

TINEIDAE
Homostinea curviliniella Nov, Dec
Tiquadra inscitella Dec

TORTRICIDAE
Aethes sp. Nov, Dec
Ancylis comptana Dec, Jan
Argyrotaenia kimballi Dec
Bactra furfurana Dec
Bactra verutana Nov, Jan
Chimoptesis gerulae Dec
Clepsis peritana Nov, Dec
Coelostathma discopunctana Dec
Coelostathma placidana Dec, Jan
Crocidosema plebejana Dec, Jan
Cydia caryana Nov
Endothenia hebesana Dec, Jan
Eugnosta bimaculana Nov
Eumarozia malachitana Dec
Platphalonidia magdalenae Nov, Dec
Platynota flavedana Dec
Platynota idaeusalis Nov
Platynota rostrana Nov, Jan
Rhyacionia sp. Dec
Sparganothis sulfureana Nov, Dec, Jan
Suleima helianthana Jan

Pyralidae: *Atheloca subrufella* – Palm Bud Moth

Pyralidae: *Atheloca subrufella* – Palm Bud Moth

Scythrididae: *Neoscythris fissirostris*

Scythrididae: *Neoscythris fissirostris*

Gelechiidae: *Aristotelia elegantella*

Sphingidae: *Erinnyis ello* – Ello Sphinx

Virginia: Harry Pavulaan, 606 Hunton Place, Leesburg, VA. 20176, E-Mail: Pavulaan@aol.com

Harry sends in the following report: 2021 fall/2022 winter report for Virginia:
County/Independent City records are indicated in all CAPITALS.

Butterflies:

Papilio polyxenes asterius – Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (1 on *Verbena bonariensis*) (Nick Flanders – sight).

Pterourus glaucus – Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight).

Pterourus troilus – Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight).

Pterourus palamedes – Newport News City: Mulberry Island, 7/4/2021 (1) (Nick Flanders – sight); Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (1) (Nick Flanders – sight).

Colias philodice – Loudoun Co.: Leesburg, 12/2/2021 (1) (Harry Pavulaan – sight).

Colias eurytheme – Loudoun Co.: Leesburg, 12/1/2021 (1), 12/2/2021 (2), 12/3/2021 (1 on *Taraxacum officinale*), 12/17/2021 (1) (Harry Pavulaan – sight). Suffolk City: White Marsh Road, 10/16/2021 (2) (Nick Flanders – sight). Surry Co.: Chippokes Plantation State Park, 12/26/2021 (2) (Nick Flanders – sight).

Pieris rapae – Charlottesville City: University of Virginia, 12/16/2021 (1) (Harry Pavulaan – sight). Hopewell City: Hopewell City Park, 10/31/2021 (2 on *Cosmos* sp.) (Nick Flanders – sight). Portsmouth City: various locations, 12/25/2021 (2), 2/11/2022 (2), 2/17/2022 (1), 2/19/2022 (1), 2/28/2022 (1), 3/1/2022 (2), 3/2/2022 (3) (all Nick Flanders – sight). Suffolk City: Driver, 12/2/2021 (6) (Nick Flanders – sight).

Abaeis nicippe – HOPEWELL City: Hopewell City Park, 10/31/2021 (1 on *Cosmos* sp.) (Nick Flanders – sight).

Phoebis sennae – HOPEWELL City: Hopewell City Park, 10/31/2021 (3 on *Cosmos* sp.) (Nick Flanders – sight). Newport News City: Mariner's Museum, 9/11/2021 (4) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (7 on *Verbena bonariensis*) (Nick Flanders – sight). Virginia Beach City: Lake Wright, 1/1/2022 (1) (Nick Flanders – sight). Suffolk City: Driver, 12/2/2021 (6) (Nick Flanders – sight).

Calycopis cecrops - Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (1 on *Verbena bonariensis*) (Nick Flanders – sight).

Celastrina neglecta – Loudoun Co.: Leesburg, Veterans Memorial Park, 2/23/2022 (2) (Harry Pavulaan – sight). Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (1 on *Verbena bonariensis*) (Nick Flanders – sight).

Cupido comyntas - Newport News City: Mariner's Museum, 9/11/2021 (3) (Nick Flanders – sight).

Danaus plexippus – HOPEWELL City: Hopewell City Park, 10/31/2021 (1 on *Cosmos* sp.) (Nick Flanders – sight). Newport News City: Mariner's Museum, 9/11/2021 (2) (Nick Flanders – sight).

Libytheana carinenta – Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (2) (Nick Flanders – sight). Sussex Co.: Big Woods WMA, 2/21/2022 (1) (Nick Flanders – sight).

Euptoieta claudia – HOPEWELL City: Hopewell City Park, 10/31/2021 (2 on *Cosmos* sp.) (Nick Flanders – sight).

Asterocampa celtis – ISLE OF WIGHT Co.: Smithfield, Windsor Castle Park, 10/3/2021 (1) (Nick Flanders – sight).

Asterocampa clyton – PORTSMOUTH City: 9/10/2021 (1) (Nick Flanders – sight).

Phyciodes tharos tharos – Chesapeake City: Bells Mill Park, 9/18/2021 (15); Great Dismal Swamp NWR, 9/25/2021 (1) (all Nick Flanders – sight). HOPEWELL City: Hopewell City Park, 10/31/2021 (2 on *Cosmos* sp.) (Nick Flanders – sight). Norfolk City: Virginia Zoo, 8/28/2021 (1) (Nick Flanders – sight). Portsmouth City: Churchland, 9/30/2021 (1), Paradise Creek Nature Park, 9/1/2021 (1 on *Verbena bonariensis*) (Nick Flanders – sight); Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (37) (Nick Flanders – sight); Suffolk Seaboard Coastline Trail, 10/23/2021 (1) (Nick Flanders – sight).

Nymphalis antiopa – Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (1) (Nick Flanders – sight). Sussex Co.: Big Woods WMA, 2/21/2022 (2) (Nick Flanders – sight).

Limenitis arthemis astyanax – Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (1) (Nick Flanders – sight).

Limenitis archippus archippus – PORTSMOUTH City: Paradise Creek Nature Park, 9/22/2021 (1) (Nick Flanders – sight).

Vanessa atalanta - Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight).

Junonia coenia – HOPEWELL City: Hopewell City Park, 10/31/2021 (4 on *Cosmos* sp.) (Nick Flanders – sight). Loudoun Co.: Leesburg, 12/4/2021 (1) (Harry Pavulaan – sight). Newport News City: Mariner's Museum, 9/11/2021 (3) (Nick Flanders – sight).

Cyllopsis gemma - Suffolk City: Suffolk Seaboard Coastline Trail, 8/30/2021 (1) (Nick Flanders – sight).

Urbanus proteus – Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight). Portsmouth City: Churchland, 9/16/2021 (1 on *Lantana camara*), 9/22/2021 (1 on *Lantana camara*), 10/5/2021 (1 on *Buddleia* sp., *Lantana camara*), 10/20/2021 (1); Paradise Creek Nature Park, 9/22/2021 (1 on *Verbena bonariensis*) (all Nick Flanders – sight).

Gesta horatius - Newport News City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (3 on *Verbena bonariensis*) (Nick Flanders – sight).

Nastra lherminier – ISLE OF WIGHT Co.: 8/3/2021 (1) (Nick Flanders – sight). Suffolk City: Suffolk Seaboard Coastline Trail, 8/30/2021 (1 on *Helenium* sp.) (Nick Flanders – sight).

Atalopedes campestris – HOPEWELL City: Hopewell City Park, 10/31/2021 (1 on *Cosmos* sp.) (Nick Flanders – sight).

Euphyes vestris – ISLE OF WIGHT Co.: Blackwater Ecological Preserve, 7/24/2021 (1 on *Clethra alnifolia*) (Nick Flanders – photo confirmation of previous county sight-based record); Smithfield, Windsor Castle Park, 9/3/2021 (1 on *Abelia* sp.) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (1 on *Verbena bonariensis*) (Nick Flanders – sight).

Euphyes dion – Norfolk City: Virginia Zoo, 8/28/2021 (1) (Nick Flanders – sight). Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (4 on *Verbena bonariensis, Conoclinium* sp.) (Nick Flanders – sight).

Hylephila phyleus – Chesapeake City: Bells Mill Park, 9/18/2021 (52 on *Verbena bonariensis*) (Nick Flanders – sight); HOPEWELL City: Hopewell City Park, 10/31/2021 (3 on *Cosmos* sp.) (Nick Flanders – sight).

Anatrytone logan - PORTSMOUTH City: Paradise Creek Nature Park, 9/22/2021 (1 on *Cirsium* sp.) (Nick Flanders – photo).

Lon zabulon – NEWPORT NEWS City: Mariner's Museum, 9/11/2021 (1) (Nick Flanders – sight).

Poanes viator – Chesapeake City: Bells Mill Park, 9/18/2021 (1) (Nick Flanders – sight). Isle of Wight Co.: Smithfield, Windsor Castle Park, 9/3/2021 (1 on *Clematis terniflora*) (Nick Flanders – sight). NEWPORT NEWS City: Mulberry Island, 7/4/2021 (3) (Nick Flanders – sight). Norfolk City: Virginia Zoo, 8/28/2021 (3) (Nick Flanders – sight). Portsmouth City: Churchland, 8/27/2021 (2) (Nick Flanders – sight); Paradise Creek Nature Park, 9/21/2021 (2), 9/30/2021 (2) (Nick Flanders – sight).

Poanes aaroni - PORTSMOUTH City: Paradise Creek Nature Park, 9/21/2021 (1 on *Symphyotrichum* sp., *Verbena bonariensis*) (Nick Flanders – sight).

Lerema accius – Chesapeake City: Bells Mill Park, 9/18/2021 (2) (Nick Flanders – sight). Isle of Wight Co.: Smithfield, Windsor Castle Park, 9/3/2021 2 on *Buddleia* sp.), 10/3/2021 (1 on *Buddleia* sp.) (Nick Flanders – sight). Newport News City: Mariner's Museum, 9/3/2021 (2), 9/11/2021 (2) (Nick Flanders – sight). Norfolk City: Virginia Zoo, 8/28/2021 (2) (Nick Flanders – sight). Portsmouth City: Churchland, 9/10/2021 (1), 9/26/2021 (1), 9/28/2021 (1), 10/5/2021 (1 on *Buddleia* sp., *Lantana camara*), 10/21/2021 (2), 9/21/2021 (3), 9/22/2021 (4), 9/30/2021 (14), 10/20/2021 (2), 10/21/2021 (1 on *Aster* sp.); Paradise Creek Nature Park, 9/1/2021 (2 on *Verbena bonariensis, Cirsium* sp.) (all Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (4); Suffolk Seaboard Coastline Trail, 10/23/2021 (4) (all Nick Flanders – sight). Surry Co.: Chippokes Plantation State Park, 8/22/2021 (1) (Nick Flanders – sight).

Calpodes ethlius – Portsmouth City: Churchland, 8/5/2021 (1), 9/28/2021 (1 on *Canna* sp.), 10/13/2021 (1), 10/20/2021 (1 on *Ruellia simplex*) (Nick Flanders – sight).

Panoquina panoquin – NEWPORT NEWS City: Mulberry Island, 7/4/2021 (1) (Nick Flanders – sight). Norfolk City: Virginia Zoo, 8/28/2021 (6) (Nick Flanders – sight). Portsmouth City: Churchland, 8/27/2021 (2) (Nick Flanders – sight); Paradise Creek Nature Park, 9/1/2021 (5 on *Verbena bonariensis*), 9/21/2021 (1), 9/22/2021 (2), 9/30/2021 (1) (Nick Flanders – sight).

Panoquina ocola – Chesapeake City: Bells Mill Park, 9/18/2021 (2 on *Verbena bonariensis*) (Nick Flanders – sight). HOPEWELL City: Hopewell City Park, 10/31/2021 (1 on *Cosmos* sp.) (Nick Flanders – sight). Isle of Wight Co.: Smithfield, Windsor Castle Park, 9/3/2021 (2 on *Buddleia* sp.), 10/3/2021 (1 on *Buddleia* sp.) (Nick Flanders – sight). NEWPORT NEWS City: Mariner's Museum, 9/11/2021 (2) (Nick Flanders – sight). PORTSMOUTH City: Churchland, 8/21/2021 (1), 9/10/2021 (1), 9/26/2021 (4), 9/28/2021 (2), 10/5/2021 (1 on *Buddleia* sp., *Lantana camara*), 10/20/2021 (1); Hoffler Creek Preserve, 9/26/2021 (1); Paradise Creek Nature Park, 9/21/2021 (2), 9/22/2021 (2), 9/30/2021 (9), 10/21/2021 (2 on *Aster* sp.) (all Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 10/16/2021 (19) (Nick Flanders – sight); Suffolk Seaboard Coastline Trail, 8/30/2021 (1 on *Verbena bonariensis*) (Nick Flanders – sight)..

Amblyscirtes carolina - Suffolk City: Suffolk Seaboard Coastline Trail, 8/30/2021 (1 on *Verbena bonariensis, Eupatorium* sp.) (Nick Flanders – sight).

Amblyscirtes aesculapius - Suffolk City: Suffolk Seaboard Coastline Trail, 8/30/2021 (1 on *Pycnanthemum* sp.) (Nick Flanders – sight).

Ancyloxypha numitor - Portsmouth City: Paradise Creek Nature Park, 9/1/2021 (1 on *Lotus corniculata*) (Nick Flanders – sight)

Moths:

Antheraea polyphemus – Loudoun Co.: Leesburg, 3/3/2022 (1 cocoon on *Acer platanoides*) (Harry Pavulaan, collected for rearing). PORTSMOUTH City, Churchland, 8/18/2021 (1) (Nick Flanders – sight).

Louisiana (Late report):

Michael Lockwood sends in this Parish Record for Louisiana:

Alypia octomaculata, Male, 21, March, 2022, Houma, Louisiana, Terrebonne Parish.

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

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