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

J. BARRY LOMBARDINI: EDITOR

TINEA TRANSLUCENS MEYRICK, THE TROPICAL CASEBEARING CLOTHES MOTH (LEPIDOPTERA: TINEIDAE)

BY

JAMES E. HAYDEN AND LYLE J. BUSS

The larvae of casebearing clothes moths infest woolens, fabrics, feathers, etc. and make portable cases of their foodstuff (Figs. 1, 2). What we usually call *Tinea pellionella* Linnaeus comprises a complex of closely related species. Examination of specimens of *T. "pellionella"* collected in Florida and submitted for identification has shown that *Tinea translucens* Meyrick is the most common species in the state, with specimens dating back to 1970 (Figs. 3-5).

Fig. 1. Larva of *T. translucens* (Lee Co., FL, 2017).

Fig. 2. Larval cases of *T. translucens* (Alachua Co., FL, 2017).

Robinson (1979) revised the *T. pellionella* complex and provided much information about *T. translucens*, which may be called the tropical casebearing clothes moth. *Tinea translucens* mainly inhabits the tropics and

subtropics, and it occurs on most continents, including Europe, Africa, South and East Asia, Australia, North and South America (Robinson 1979, 2009; Robinson and Nielsen 1987). The only published record that we can find for North America is Virginia (Robinson 1979). The larvae have been found only in synanthropic conditions, not in the natural environment. True *T. pellionella* prefers cooler temperate climates.

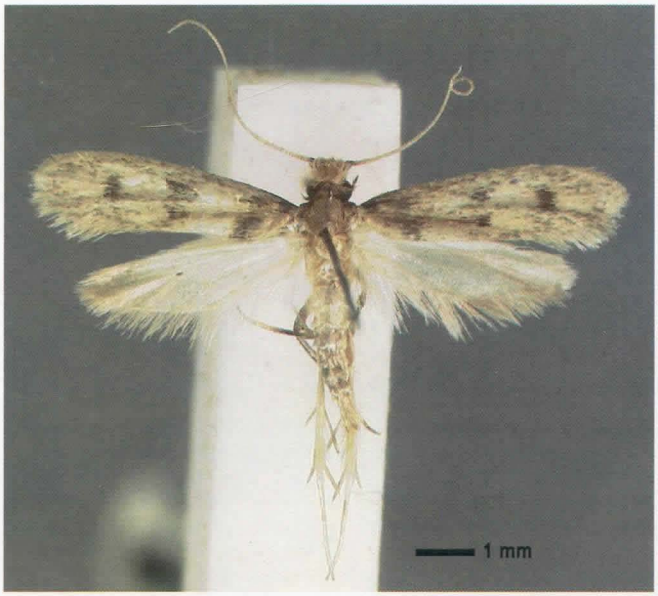


Fig. 3. *Tinea translucens* (FL, Hillsborough Co., Temple Terrace, 1991, leg. Adair). Scale 1 mm.

Fig. 4. Moth of *T. translucens* (Lee Co., FL, 2017).

Fig. 5. Moth of *T. translucens*, somewhat more worn (Hillsborough Co., FL, 2012).

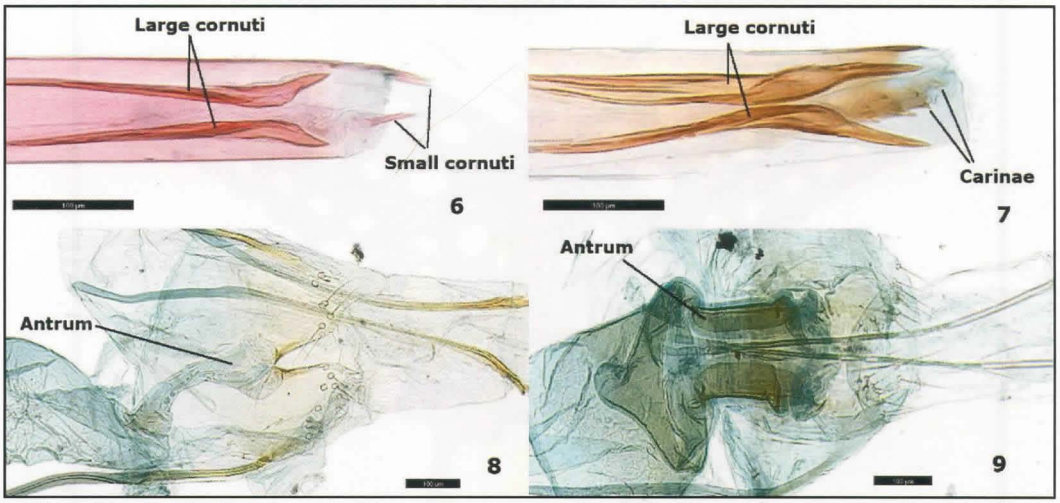
The two species differ in behavior. Robinson (1979) reported that neonates of *T. translucens* habitually crawl around for a day before weaving cases, whereas *T. pellionella* larvae construct cases right after hatching. He also found that *T. translucens* is easier to maintain in colony. Preliminary evidence suggests that species of the *T. pellionella* complex may differ in their levels of insecticide resistance (Robinson and Nielsen 1987). The pantropical distribution of *T. translucens* may frustrate trace-back efforts to determine where in the world imported goods were infested.

Identification requires dissection. Robinson (1979) illustrates the genitalia of all species in the complex, and Mleczak et al. (2016) give photographs of *T. translucens* and *T. pellionella*. The most reliable differences are in the cornuti of the phallus. Both *T. translucens* and *T. pellionella* have two large, long cornuti with pointed apices and slightly swollen subapical sections. In *T. translucens* (Fig. 6), the apical point is short, whereas in *T. pellionella* (Fig. 7), the apical point is longer than the subapical region. *Tinea translucens* has four or more elongate, needle-like small cornuti at the end of the phallus. *Tinea pellionella* instead has five to ten short, thorn-like "carinae" distad of the two large cornuti. In female *T. translucens*, the antrum is long and narrow (Fig. 8), and there are only two signa with irregular edges (not figured). In *T. pellionella*, the antrum is shorter and broader (Fig. 9), and there are two to five evenly sclerotized signa. The genitalia images were taken with a Leica DM6 B compound microscope, a DMC6200 camera, and Leica Application Suite X, automated to process and merge tiled stacking.

Material examined. Specimens are in the Florida State Collection of Arthropods (FDACS-DPI) or the University of Florida Insect Identification Laboratory, both in Gainesville, Florida. "E[year]" numbers refer to submissions to FDACS-DPI Entomology, and MGCL refers to the McGuire Center for Lepidoptera.

***Tinea translucens*: USA, Florida:** *Alachua Co.*: 18 adults: Gainesville, in house, 12-VIII-1970, C.I. Ayres, MGCL slides 4157m, 4158f; 1 M: Gainesville, 9-II-1973, H. Greenbaum, J.B. Heppner slide 212; 4 F: Gainesville, Nov. 1971 (two) and Jan. 1972 (two), L.A. Hetrick, MGCL slide 4161; 1 M: Gainesville, 22-III-1979, J.P. Junkin, MGCL slide 4206; 17 M: Gainesville, 400 NW 32nd St., on clothes moth traps, Oct. 2016–Mar. 2017, E2017-1082, MGCL slides 4141, 4142, 4144, 4154, 4155; 2 M: Gainesville, 1002 NW 41st Dr. reared ex Oriental rugs, 18-XI-2016, public via L. Buss, UF Insect ID Lab #16483, MGCL slide 4178; 1 M: Gainesville, 603 NE 6th Ave. ex woolen clothes, 8-I-2018, MGCL slide 4607; *Duval Co.*: 2M: Jacksonville, public through Bug Hunter Pest Control, 30-III-2014, via L. Buss, UF ID Lab #14187, [in] kitchen, [one] 3/30/14, [one] 4/2/14, MGCL slide 4200; 2F: Jacksonville, likely ex wool rugs, 13-VII-2015, public via L. Buss, UF ID Lab #15381, MGCL slide

4199; *Hillsborough Co.*: 2M, 1 F: Tampa, 3416 Mullen Ave. Home, 27-I-2012, public via Lyle Buss, #12031, MGCL slides 456m, 457f; 9 adults: Temple Terrace, 15–30-IX-1991, ex wool rug, W. Lee Adair, Jr., MGCL slide 4159; 1 M, 2 F: Lutz, 808 Sandringham Lane, ex wool rugs, 28-XII-2017, public via L. Buss, MGCL slide 4568; *Lee Co.*: 2 M, 5 F: Ft. Myers, larvae in Oriental rug, 14-X-2006, Stephen Brown, started lab colony, UF Insect ID Lab sample #06411, specimens removed on 9 July 2007, 30 Jan. 2008, 25 June 2008, 27 June 2008, 30 Sep. 2008, MGCL slides 4164m, 4165f; *Orange Co.*: 1 M: through Orange Co. Ext. Service, ex rug from Russia 1-XII-2004, public via Lyle Buss, UF ID Lab #04417, J.E. Hayden slide 5089; 3 M: Orlando, moth trap in rental house. 23-IV-2017, public via L. Buss, UF ID Lab #17177, MGCL slide 4217; *Pinellas Co.*: 1M: Clearwater, ex partly woollen carpet, 24-III-1981, J. Ruiz, MGCL slide 4205.



Figs. 6-9: Genitalia. 6, male *Tinea translucens*, tip of phallus with cornuti (slide #4159); 7, male *T. pellionella*, tip of phallus with cornuti and carinae (slide #4484); 8, female *T. translucens*, antrum (slide #4165); 9, female *T. pellionella*, antrum (slide #4482). Dissection scales 100 µm.

***Tinea pellionella*: 7 adults: USA, Minnesota:** *Chippewa Co.*: Clara City, 12075 30th St. SE 44.9786, -95.3346 in dilapidated house, 29 June–6 July 2017 Lyle J. Buss, MGCL slides 4481 male, 4482 female, 4483 female, 4484 male.; **Georgia:** 5 adults: *Chatham Co.*: Cultures SPIROL 6-X-1981 leg. R.T. Arbogast, Coll. #81.18, MGCL slides 2623 male, 2624 female; **Missouri:** 1 F: *Jasper Co.*: Carthage, emg. indoors, leg. H. Patrick 18-II-1986, W.S. Craig, MGCL slide 4166.

Although *T. translucens* is the common species in Florida and *T. pellionella* is apparently absent, the occurrence of yet other species of the *T. pellionella* group should always be considered possible. We have examined some specimens that we cannot determine to species, but which are not *T. translucens*. Similarly, residents of other Southern states should examine specimens to determine their identity.

Acknowledgments

We thank several donors to the McGuire Center for Lepidoptera & Biodiversity for providing funds for the Leica microscope camera system. We also thank all the people who have suffered clothes moths and sent them to us, especially the resident of Gainesville whose infestation in 2017 brought the misidentifications to our attention. Jessica Awad, Debbie Matthews, and Paul Skelley reviewed this. We thank the Florida Department of Agriculture and Consumer Services, Division of Plant Industry, for support of this work.

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Lyle J. Buss, Entomology & Nematology Dept., University of Florida, Gainesville, FL)

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Association for Tropical Lepidoptera

Pharmacophagus antenor
Madagascar

Lep.Soc.- So.Lep.Soc.- Assoc.Trop.Lep.
Combined meeting, 16-19 June 2020
Western Carolina University, N.C.

Hand-colored copperplate engraving by F. P. Nodder (English, *The Naturalist's Miscellany*, 1794); the artist was appointed "botanic painter to her majesty" Queen Charlotte in 1785.

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

MANY THANKS TO THE FOLLOWING DONORS TO THE SL SOCIETY

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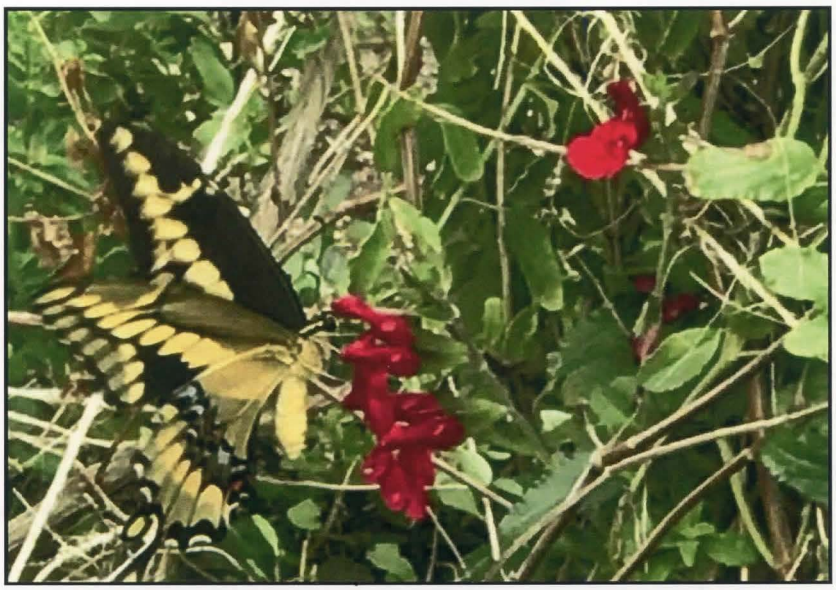


Giant Swallowtail on Radio Red Salvia (*Salvia grezzii*).
(Lubbock, Texas, September, 2019)

WATCH FOR *ERYNNIS FUNERALIS* (HESPERIIDAE) IN THE EAST

BY

JOHN V. CALHOUN

The range of *Erynnis funeralis* (Funereal Duskywing) was originally believed to be limited to the southwestern United States, south through Mexico and Central America to Argentina. In his groundbreaking treatise on the genus *Erynnis*, Burns (1964) listed records of *E. funeralis* from Arizona, California, New Mexico, and Texas, noting that it "probably appears from time to time in various parts of the Great Basin in Nevada, Utah, and eastern Colorado." East of the Rocky Mountains, it was known to occur irregularly in Arkansas, Colorado, Kansas, Nebraska, and Oklahoma. Burns (1964) also mentioned four old male specimens from the Florida Panhandle and a "possible *funeralis* x *zarucco* hybrid" from Louisiana.

The very similar *Erynnis zarucco* (Zarucco Duskywing) is mostly established east of the Mississippi River, across the southeastern United States, with strays northward to Massachusetts, Pennsylvania, and Ontario. It also occurs in Cuba and Hispaniola. The easiest method to differentiate these species is the color of the hindwing fringe; it is snowy white in *E. funeralis* and typically brown or buff-colored in *E. zarucco*. However, some *E. zarucco* (especially females) from the lower Florida Keys can have a nearly white fringe, leading to speculation about the genetic influence of *E. funeralis* in that population (Minno & Emmel 1993). Adults of *E. zarucco* from elsewhere in the southeast can also have a very pale or mostly white fringe. Such phenotypes may be hybrids or the result of past genetic introgression from *E. funeralis*. The forewings of *E. funeralis* also tend to be longer, and their ground color is darker on average. Burns (1964) considered *E. funeralis* and *E. zarucco* to be differentiates of one superspecies (*E. zarucco*), yet he accepted them as separate species. Although Scott (1986) subsequently recognized them as subspecies of *E. zarucco*, these butterflies are most often treated as discrete species (e.g. Lamas 2004, Mielke 2005, Pohl et al. 2018, Pelham 2019).

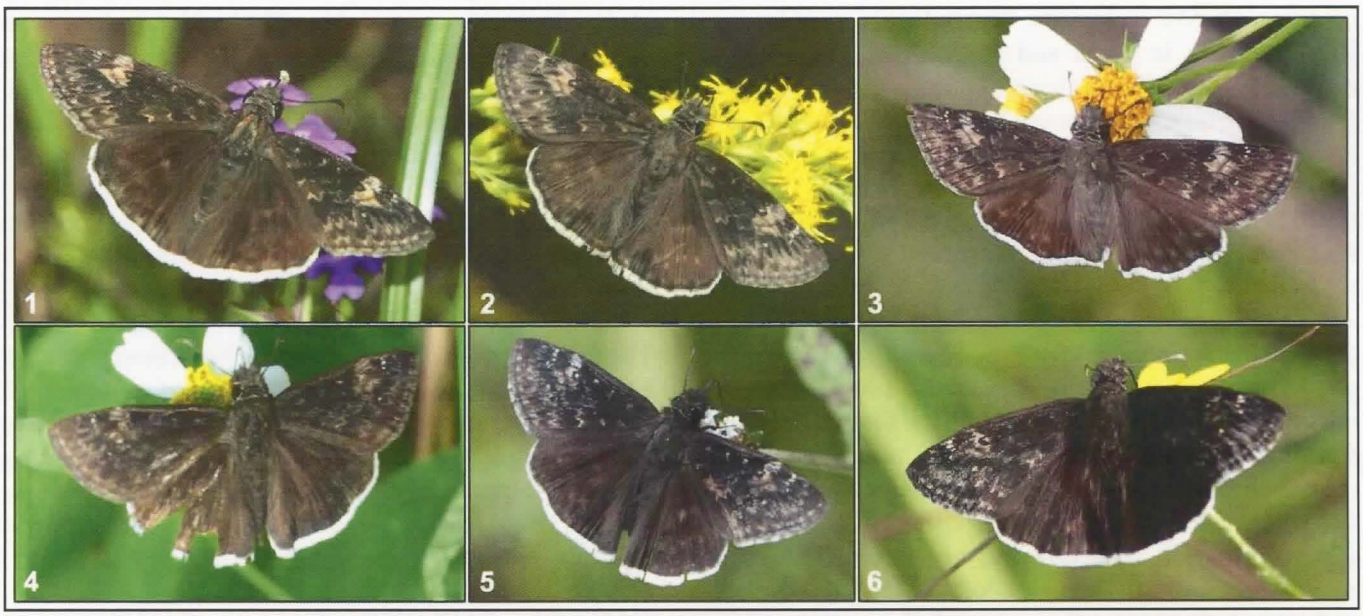
By the mid-1990s, *E. funeralis* was documented from other localities in northern Florida, as well as in Indiana, Kentucky, and Missouri. Although this species was thought to be a rare stray in the east, Carpenter (2015) concluded that it is a regular, seasonal immigrant that establishes temporary populations in much of eastern North America. Larvae of *E. funeralis* are known to feed on various legumes, but its food plants east of Texas are uncertain. A female was photographed ovipositing on naturalized rattlebox, *Sesbania punicea*, in the Florida panhandle (L. Atherton, pers. comm.), and it was possibly observed ovipositing on peavine, *Lathyrus* sp., in Illinois (Carpenter 2015).

After learning of several new reports of *E. funeralis* in Florida, I became curious about other recent eastern records. I searched numerous published and unpublished sources, including regional books and lists, the Lepidopterists' Society season summaries, and regional reports in the Southern Lepidopterists' News. I also consulted online databases and talk groups, including BugGuide (bugguide.net/node/view/15740), Butterflies and Moths of North America (BAMONA; butterfliesandmoths.org), Carolina Butterfly Discussion (lists.duke.edu/sympa/arc/carolinaleps), eButterfly (ebutterfly.org), Flickr (flickr.com), Global Biodiversity Information Facility (gbif.org), iNaturalist (inaturalist.org), KY Butterfly Net Database (kylepidopterists.org/database.html), North American Butterfly Association (NABA; sightings.naba.org), Ohio Lepidopterists webpage (ohiolepidopterists.org), Symbiota Collections of Arthropods Network (SCAN; scan-bugs.org/portal/), and Wisconsin Butterflies (wisconsinbutterflies.org/butterfly). Additional information was obtained directly from observers and state data coordinators. Most records were confirmed via photographs.

The following list is not intended to be a comprehensive summary of all known eastern records of *E. funeralis*, but it gives a good idea of just how many have been documented east of the Mississippi River (excluding eastern Minnesota and southeastern Louisiana) within the past two decades. Several county records comprise multiple reports during the same year.

CANADA: ONTARIO (first record 1981): many records between 1999 and 2019 from Point Pelee, north to Toronto. **UNITED STATES: ALABAMA:** 2014 (Baldwin and Colbert cos.; first records), 2015 (Baldwin Co.), 2016 (Baldwin Co.), 2018 (Baldwin, Jackson, Jefferson, and Marshall cos.), 2019 (Baldwin and Mobile cos.); **FLORIDA** (Figs. 1-5) (first record 1914): 2003 (Alachua, Franklin, and Jackson cos.), 2004 (Franklin and Jackson cos.), 2005 (Alachua and Jackson cos.), 2006, (Okaloosa Co.), 2007 (Franklin and Gilchrist cos.), 2009 (Okaloosa and Taylor cos.), 2012 (Wakulla Co.), 2015 (Marion Co.), 2018 (Franklin, Gulf, Taylor, and Wakulla cos.), 2019 (Polk and Wakulla cos.); **GEORGIA** (first record 1950): 2000 (Fulton Co.), 2019 (McIntosh Co.) (Fig. 6); **ILLINOIS** (first

record 1998): 1999 (Alexander and Saline cos.), 2004 (La Salle Co.), 2007 (Christian Co.), 2010 (DuPage, Fulton, Henderson, Lake, McHenry, and Will cos.), 2011 (Alexander, Cook, and DuPage cos.), 2012 (Clay, Fayette, Grundy, Kankakee, Lake, La Salle, McLean cos.), 2013 (Champaign Co.), 2015 (McHenry Co.), 2017 (DuPage Co.), 2019 (Coles, Cook, Hancock, Lake cos.); **INDIANA** (first record 1936): 2001 (Porter Co.), 2003 (Vigo Co.), 2004 (Bartholomew Co.), 2010 (Tippecanoe Co.), 2012 (Tippecanoe Co.), 2014 (Brown and Madison cos.), 2016 (Hamilton Co.), 2019 (Dearborn Co.); **KENTUCKY** (first record 1981): 1999 (Carlisle Co.), 2001 (Fulton Co.), 2010 (Fulton and Menifee cos.); **MARYLAND:** 2019 (Worcester Co.; first record); **MICHIGAN:** 2001 (Chippewa Co.; first record), 2018 (Grand Traverse and Kalamazoo cos.); **MISSISSIPPI** (first record 1970): 1999 (Jackson Co.), 2001 (Jackson and Warren cos.), 2014 (Sharkey Co.), 2016 (Lafayette Co.), 2017 (Adams Co.), 2018 (Adams, Issaquena, Jackson cos.); **NEW JERSEY:** 2014 (Morris Co.; first record); **NEW YORK:** 2019 (New York Co.; first record); **NORTH CAROLINA:** 2000 (New Hanover Co.; first record), 2010 (Brunswick Co.), 2019 (Chatham Co.); **OHIO:** 2008 (Franklin Co.; first record), 2011 (Lake Co.), 2012 (Logan Co.), 2015 (Montgomery Co.), 2017 (Montgomery Co.), 2018 (Cuyahoga and Montgomery cos.), 2019 (Franklin, Licking, Lucas, Montgomery, and Wayne cos.); **PENNSYLVANIA:** 2003 (Allegheny Co.; first record), 2018 (Warren Co.), 2019 (Allegheny Co.); **RHODE ISLAND:** 2010 (Washington Co.; first record); **SOUTH CAROLINA:** 2010 (Williamsburg Co.; first record), 2015 (Clarendon Co.); **TENNESSEE:** 2007 (Shelby Co.; first record), 2009 (Stewart Co.), 2010 (DeKalb, Lake, and Lauderdale cos.), 2011 (Stewart Co.), 2012 (Davidson and Shelby cos.), 2016 (Dyer Co.), 2019 (Lake, Lewis, and Shelby cos.); **VIRGINIA:** 2017 (Greene Co.; first record); **WISCONSIN:** 2002 (Trempealeau Co.; first record), 2007 (Dane Co.), 2010 (Dane, Milwaukee, and Vernon cos.), 2012 (Crawford and Milwaukee cos.), 2015 (Columbia, Crawford, Jackson, Milwaukee, Sheboygan, and Waukesha cos.), 2017 (Jackson and Walworth cos.), 2018 (Dane, Dodge, Lafayette, Milwaukee, Sauk, and Waushara cos.), 2019 (Dane and Milwaukee cos.).



Figs. 1-6. *Erynnis funeralis* from Florida and Georgia. 1, Okaloosa Co., FL, 19.vii.2009 (M. A. Friedman). 2, Taylor Co., FL, 19.ix.2009 (D. Jue). 3, Marion Co., FL, 4.x.2015, (T. Palmer). 4, Wakulla Co., FL, 16.ix.2012 (D. Jue). 5, Taylor Co., FL, 9.ix.2018 (D. Jue). 6, McIntosh Co., GA, 14.x.2019 (J. & N. Crosby).

These records imply that large numbers of *E. funeralis* regularly invade eastern North America. As noted by Carpenter (2015), this species probably does not overwinter in the east, but it appears to be capable of producing at least two broods during a given season. Records from the most distant eastern localities are few and presumably result when more temporary colonies are established as the species spreads eastward. The majority of eastern records are from August-October, though many are from June-July. A few are from April-May, especially westward. The species evidently begins to disperse from its southwestern strongholds during early spring and reaches distant eastern areas later in the season. The first known record from Georgia, a fresh male from Coweta County, dated 25 March 1950 (Milwaukee Public Museum, Milwaukee, Wisconsin), suggests that adults begin móving eastward very early during some years. The species has been recorded as early as February in southern Louisiana (Marks 2018). The significant increase in eastern reports of *E. funeralis* during the last decade is probably due to a greater number of observers and the

growing availability of options to publicly share data. Continuing research will hopefully reveal more about the biology of *E. funeralis* in the east and its relationship with *E. zarucco*.

For kindly providing data, images, and/or other assistance, I thank Lyn Atherton, Barbara Bloetscher, Julia Colby, Barbara Coleman, Linda Cooper, Islay Cowie and W. Kerr Gibson, Charles Covell, John and Nancy Crosby, Roger Downer, Dennis Forsythe, Mary Ann Friedman, Mike Gilligan, Dean Jue, Christopher Marshall, Paulette Ogard, Tom Palmer, Ricky Patterson, Harry Pavulaan, Brian Scholtens, Jon Shepard, Rita Venable, Jerry Wiedmann, and James Wiker.

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(John V. Calhoun, Email: bretcal1@verizon.net)

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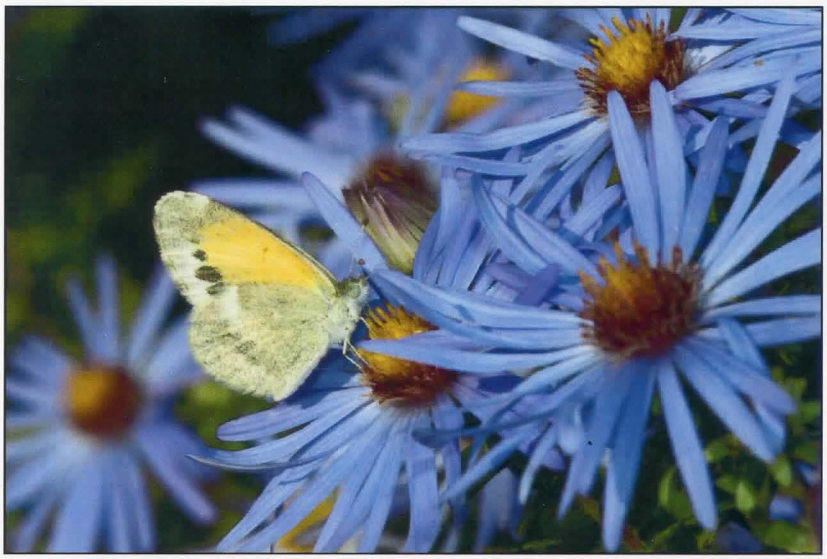
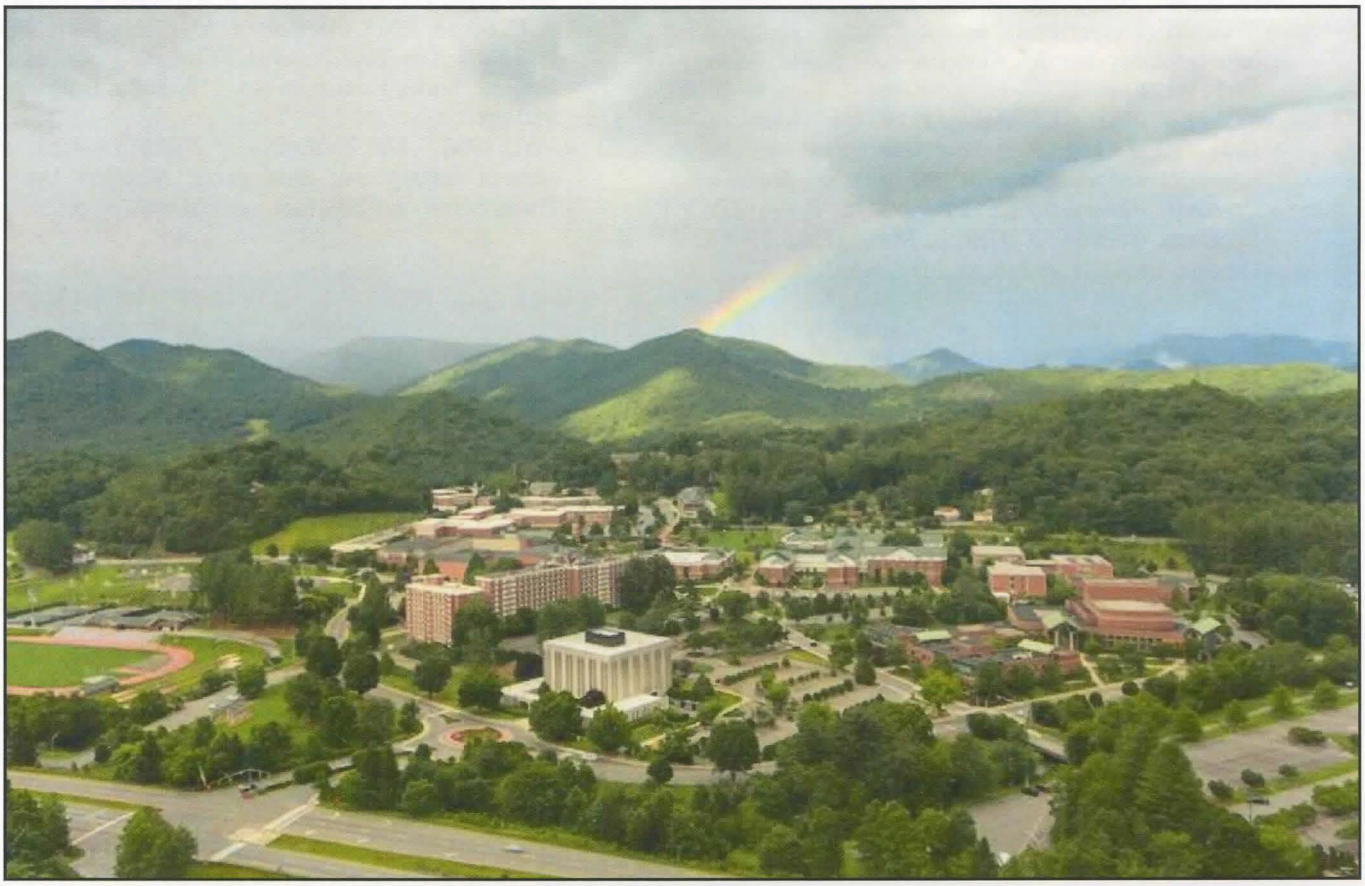


Kathy Malone states: "This is the first time I've seen a Dainty Sulphur in Middle Tennessee. They are uncommon here. They were numerous in west Tennessee this year, however, according to reports. There also was one reported in Middle Tennessee in September". (Photo taken October 14, 2019, in Fairview, Tennessee.)

2020 ANNUAL MEETING OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY

The 2020 Annual SLS Meeting will convene from 16-19 June (Tuesday through Friday) in conjunction with the Lepidopterists' Society and the Association for Tropical Lepidoptera on the campus of Western Carolina University (WCU) in Cullowhee, North Carolina. Field Trips will be organized for Tuesday (16 June). Talks will be scheduled for Wednesday through Friday (17-19 June). The Executive Council meeting of the Lepidopterists' Society is scheduled for Tuesday (16 June); the SLS business meeting will convene sometime during the Wednesday through Friday period. A barbecue will be arranged for Thursday evening at Highlands Biological Station (followed by blacklighting for anybody interested) and a banquet for Friday evening at WCU. Talks and meeting registration should be submitted via the Lepidopterists' Society meeting website which should be up and running soon. Housing reservations for the meeting will be arranged by WCU – more information to follow in the March 2020 SLS Newsletter.

WCU 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. Please plan to attend and present a talk.



Western Carolina University campus

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THE GENUS *CALLOPISTRIA* HÜBNER (1821) (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU JR. AND CHARLOTTE D. BROU

Fig. 1. Louisiana phenotypes: ***Callopistria floridensis*** (a-d) males, (e-f) females, ***Callopistria mollissima*** (g-h) males, (j-k) females, ***Callopistria granitosa*** (m-n) males, (o-p) females, ***Callopistria cordata*** (q-s) males, (t-v) females.
All captured at the *Abita entomological study site near Abita Springs, St. Tammany Parish except (d) from Edgard, St. John the Baptist Parish. Dates of capture: **a.** September 25-2009, **b.** February 8-1999, **c.** October 15-1988, **d.** November 10-1978, **e.** October 8-1988, **f.** October 21-2007, **g.** May 22-2009, **h.** May 23-2007, **j.** May 20-2009, **k.** June 2-1993, **m.** April 3-2008, **n.** September 7-1993, **o.** June 5-2008, **p.** March 25-2009, **q.** June 22-2008, **r.** April 2-1988, **s.** July 13-2009, **t.** July 26-1988, **u.** June 5-2009, **v.** May 14-2007.

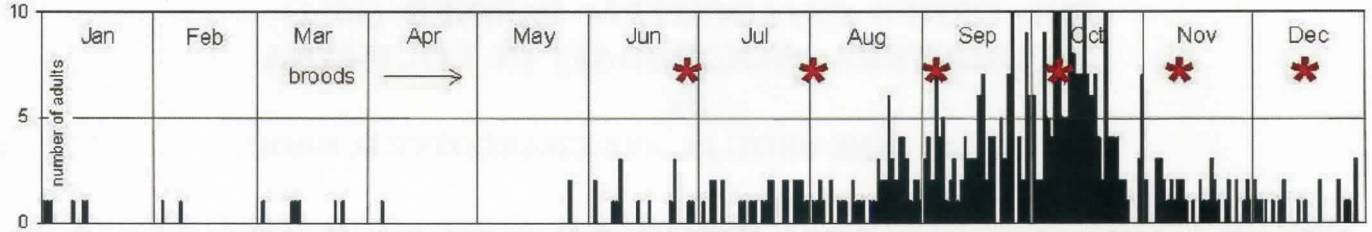

Fig. 2. Adult ***Callopistria floridensis*** captured in Louisiana. n = 478

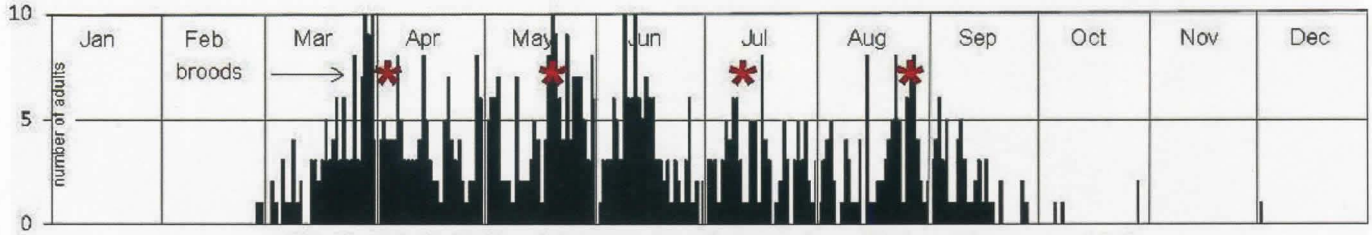

Fig. 3. Adult ***Callopistria mollissima*** captured in Louisiana. n = 762

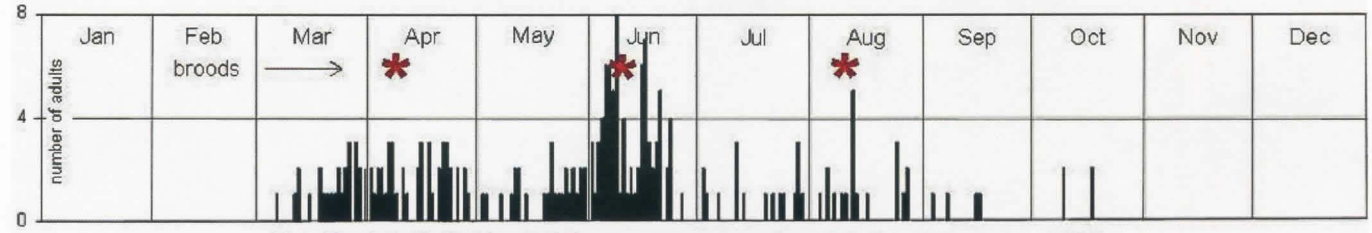

Fig. 4. Adult ***Callopistria granitosa*** captured in Louisiana. n = 222

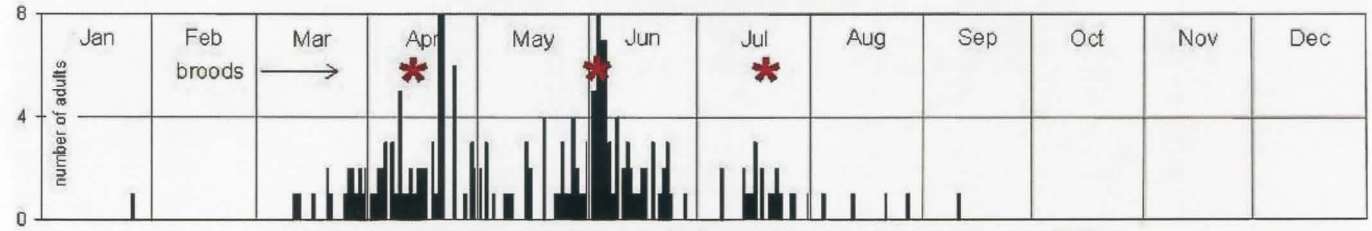

Fig. 5. Adult ***Callopistria cordata*** captured in Louisiana. n = 218

Five species of the genus ***Callopistria*** are listed by Lafontaine and Schmidt (2010) as recorded in North America, North of Mexico: ***Callopistria floridensis*** (Guenée, 1852), ***Callopistria jamaicensis*** (Möschler, 1886), ***Callopistria mollissima*** (Guenée, 1852), ***Callopistria granitosa*** (Guenée, 1852), ***Callopistria cordata*** (Ljungh, 1825).

Forbes (1954) treated four species of ***Callopistria: floridensis*** occurring in the southern states to the tropics, ***mollissima*** occurring Montreal, Canada to Florida, and west to Colorado, and ***cordata*** as ***'monetifera'*** occurring from Nova Scotia to Quebec to Florida west to Wisconsin, and the West Indies, and ***granitosa*** occurring from New Jersey to Florida and 'central states'. Chapin and Callahan (1967) included only ***floridensis*** from the Baton Rouge, Louisiana. Rockburne and Lafontaine (1976) listed two species of ***Callopistria: mollissima*** from Ontario and Quebec, and ***cordata*** under the name ***Euherrichia monetifera*** (Guenée) also from Ontario and Quebec.

Covell (1984) treated three species of ***Callopistria:mollissima*** occurring from Nova Scotia to central Florida, west to Michigan, Missouri, Arkansas and Mississippi, in the months April through June, ***granitosa*** occurring New Jersey to Florida in the months July through September, March in Florida, and ***cordata*** from Nova Scotia to central Florida west to Wisconsin and Texas in the months June to early August, March in the deep south. Covell did not address ***floridensis***. Heitzman and Heitzman (1987) did not address any species of ***Callopistria***. Heppner (2003) listed five species of ***Callopistria*** for the state of Florida, with ***jamaicensis*** listed only as a stray taken during the month of March in the Florida Keys. Powel and Opler (2009) did not address any species of ***Callopistria***. Within Louisiana a total of 1,680 specimens representing four species of the genus ***Callopistria*** (Fig. 1), Subfamily Eriopinae Herrich -Schäffer, [1851] were captured and logged during this study (Fig. 1, 2, 3, 4, 5, 6).

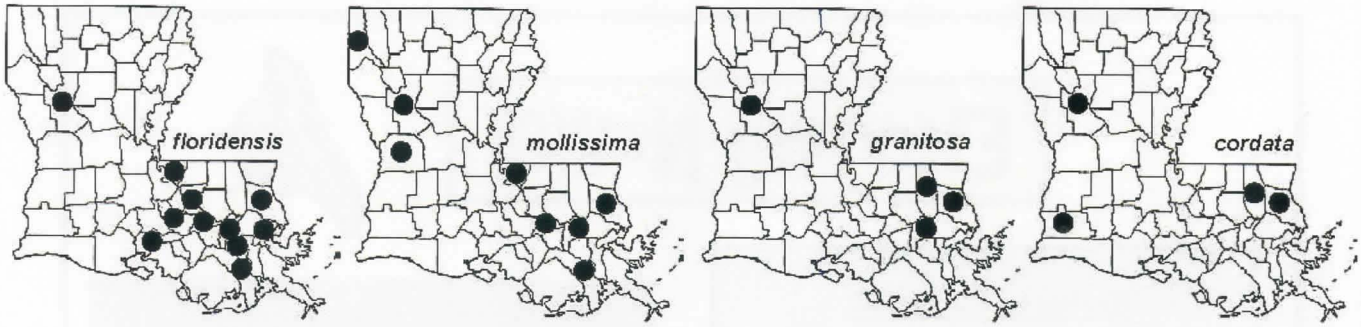

Fig. 6. Parish records for ***Callopistria*** species in Louisiana.

Callopistria floridensis (Guenée) (Fig. 1a-h), this apparent migrant species is found commonly at the *Abita Study Site. Based upon this sample, this species appears to have about six annual broods at about 34-day intervals, though adults were captured in all twelve months. Migrants of this species appear during the early months of the year, and the first brood appears in June and monthly through December. As with numerous other fall migrants, the greatest populated brood occurs during October (Fig. 2).

Callopistria mollissima (Guenée) (Fig. 1a-h), this abundant species is found commonly at the *Abita Study Site and appears to have four well populated annual broods at 48-day intervals, first (peaking beginning of April) and second (peaking third week of May, and third (peaking mid-July) and fourth (peaking end of August) (Fig. 3). Adults were documented in all months except January.

Callopistria granitosa (Guenée) (Fig. 1a-h), this species is found commonly at the *Abita Study Site, appears to have three well populated annual broods at 62-day intervals, first (peaking early April) and second (peaking early June) and third (peaking early August) (Fig. 4).

Callopistria cordata (Ljungh) (Fig. 1a-h), this species is found commonly at the *Abita Study Site, appears to have three well populated annual broods at approximately 48-day intervals, first (peaking mid-April) and second (peaking early-June) and third (peaking mid-July) (Fig. 5).

The parish records for all four species of ***Callopistria*** in Louisiana are illustrated in Fig. 6.

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

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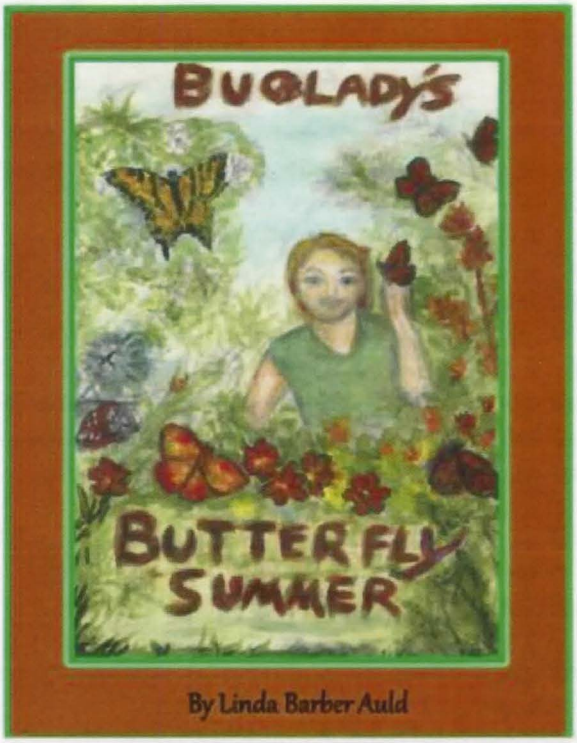
Exciting News!

Review by Ginna Hoff:

Linda Auld's never failing sense of wonder carries the reader through fifteen nature expeditions in her new book, "BugLady's Butterfly Summer". Each adventure opens up the fascinating private world of a new butterfly, presented so joyfully that reading feels like entering a fairy tale. Thirty-one high quality color plates offer a veritable field guide to what can be found in gardens and woodlands. The author's deep and wide experiences raising butterflies—their ranges, habitats, host plants and life cycles—are shared as if she is your best friend. This is the best read featuring a female adventurer and a caterpillar since "Alice in Wonderland".



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DISCOVERIES AND DANGERS WHILE COLLECTING LEPIDOPTERA

BY

F. MATTHEW BLAINE

Back in 2006 I was collecting lepidoptera in my Sussex County, Delaware back yard. I was using my newly constructed UV setup instead of UV bucket traps (Fig. 1). On March 10th, 2006, I had a bottom drawer full of moths all covered with scales because the Ethyl acetate was not in sufficient quantity to knock the specimens out immediately. As I sorted through the bottom capture drawer I picked out the undamaged moths for preparation and labeling. In the bottom of the front corner there was a small pile of damaged moths covered with scales and debris. At the bottom there was an unfamiliar shape which I picked up with my fingers and inspected it. I saw a long pointed proboscis folded back under the head. It was encrusted with moth scales which obscured it. As I cleaned the debris away I suddenly recognized what I had between my fingers. With a gasp I dropped it! I went into the house and

Fig. 1. Double UV collecting station with drawers for specimens to collect in, later modified to have UV and HG.

cleaned my fingers with soap and water then rubbing alcohol. I then checked to see if I had been punctured. Fortunately I had not. I recognized what I had caught as a possible Chagas bug, *Triatoma sanguisuga*. I knew about Chagas bugs because of my trips to Panama, Jamaica, Puerto Rico, Mexico, and The Dominican Republic, where I had been collecting shells. In these places I had stayed in local motels. In some places where they were we had to keep the doors closed on our rooms without air conditioning, despite the heat, to prevent them from entering at night while we were asleep. I began researching and could find no record of *Triatoma sanguisuga* ever being seen in Sussex County Delaware before. It was definitely a range extension in my opinion.

After this experience I was more careful when I inspected and collected specimens from my traps. I only used tweezers from that point on. All Triatominae require blood meals for their complete development and many are possible vectors for *Trypanosoma cruz* which is the cause of Chagas disease (Lent & Wygodzinsky, 1979). I wanted to make a report of this important find. I had hoped that there might be publication in which I could easily report my finding but could find none. It appeared that my only options were to write a paper subject to peer review for either the Washington Entomology Society or for the Coleopterists Society. Both of which I am a member and that I estimated would take a very long time to get published, if ever.

Fig. 2. The Chagas bug, *Triatoma sanguisuga* identified by comparison at The Florida State Colection of Arthropods.

On June 14, 2014, I captured a second specimen, then again on August 30, 2016, I captured a third specimen. Of these I sent photographs to The Florida State Collection of Arthropods with hopes of getting an expert determination. Unfortunately no such determination could be made by my photographs but I was told to bring

the specimen down for an ID. After leaving my specimen by accident I brought the 2016 specimen down in November of 2017. I had hoped to meet up with Susan Halbert (the Triatoma expert) on November 2 but due to some unforeseen events I was delayed but finally made it over to The Florida Arthropod Collection where Paul Skelley helped me find and compare specimens in the museum with mine. We agreed that I had in fact caught the Eastern Chagas bug *Triatoma sanguisuga* (Skelley) (Fig. 2). This was the first record of one being caught in Sussex County, Delaware and at the time the first in the State of Delaware.

Why is this important to a Lepidopterist? Chagas bug bites cause many serious problems to humans as well as wildlife and pets. Bites on humans result in the highest events of anaphylaxis in the United States in addition to being the vector for the transmission of *Trypanosoma crusi*, the cause of Chagas disease. "Infection rates appear to be generally highest in coastal locations, with the elevated rates assumed to be due to the increased distribution to the high humidity and lack of winter freezes along the southeastern and eastern coasts" (Kansas School Naturalists, 2011). This will undoubtedly increase with global warming so anyone doing field work should be aware of the increasing danger.

Credits

Blaine, Dona, Proof reading and comments.

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Lent & Wygodzinsky, 1979, Revision of the Triatominae (Hemiptera, Reduviidae), and their significance as vectors of Chagas' disease. Bulletin of the AMNH ; v. 163, article 3

Skelley, Paul E. Ph.D., C.P.M., personal contact, Entomology Section Administrator Florida State Collection of Arthropods Division of Plant Industry/Entomology Florida Department of Agriculture and Consumer Services UF Featured Creatures - http://entnemdept.ufl.edu/creatures/URBAN/Triatoma_sanguisuga.htm

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(F. Matthew Blaine, E-Mail: mattblaine@verizon.net)

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Photos taken by Matt Blaine in his Garden (Laurel, Delaware, October, 2019)

SPREADING BOARD IMPROVEMENTS

BY

F. MATTHEW BLAINE

Back in 2015 I wrote an article about how to build spreading boards with easily obtained materials and simple methods (Blaine, 2015). Since writing that article I have constructed around 100 spreading boards using that method and used them to spread several thousand Lepidoptera. I noticed that the pipe insulation has a tendency to move around while pinning so it is important to secure it to the bottom board. In that article I recommend installing two side supports by gluing them between the bottom board and the top spreading boards. This is very important for several reasons. It helps keep the foam in place and it adds support to the top spreading boards which have a tendency to sag in the middle when pressure is put upon them while pinning. The longer the boards, the more support is needed. If you construct a 12 inch long set you need several sets of supports glued in. The sag can also be reduced by using thicker balsa wood top boards. Most recently I have been using at least 3/16th inch soft balsa and I make my spreading boards no longer than about 9". I have found that it is much more cumbersome to use longer ones. I also make shorter versions which can be used for just a few specimens.

I also have experimented with using scrap Styrofoam for the center pin holder instead of the pipe insulation. Styrofoam has several disadvantages. For one it dissolves in the presence of PTB which I sometimes put in the plastic bins with the freshly spread Lepidoptera to dry. In addition I have had insect pins stick to it and make removal of the finished specimen difficult.

My biggest discovery came when my neighbor gave me some scrap expanded polyethylene foam that had been thrown away where he works. The sheets are used for packing delicate objects for shipment. It is also used to make tool boards with cutouts for special tools used in the luxury aircraft embellishment business. It comes in clear / whitish and also black (Stutz, 2019). I cut it with a mat knife or razor into strips that fit under the space between the pinning balsa boards leaving a space for the insect's bodies just as I did with the pipe insulation. The polyethylene is easy to insert and extract insect pins and is impervious to PDB fumes. It also lasts for a very long time without leaving old pin hole openings which happens with Styrofoam. I glue it down with either white glue like Elmer's Glue. All or some other waterproof wood glue and add the side supports just as before with the pipe insulation.

I have found the expanded Polyethylene used to package some computer parts. If you keep an eye out for it you could find a great material for spreading board construction and help keep the earth green by recycling. You can also find it for sale at these two suppliers listed in Credits among others (Stutz, 2019).

Six inch spreading board with pipe insulation

Six inch spreading board with scrap Styrofoam for pinning center

Six inch spreading board with superior polyethylene foam pinning center

"Top view of completed 6-inch" spreading board

Credits

Blaine, F. M., 2015, "An Easy Way to Construct Quality Spreading Boards", *Southern Lepidopterists' News* Vol. 37, No.4, Pg. 189.

Stutz, M., 2019, personal communication –

Orlando Products, 2639 Merchant Drive, Baltimore, MD 21230; Phone: 855-276-6537, Black Foam PLANK 476263-1.7#.

Arnold Packaging, 3101 Washington Blvd., Baltimore, MD 21230; Phone: 855-276-6537.

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THE CATAHOULA HUMMINGBIRD & BUTTERFLY GARDEN

BY

LINDA BARBER AULD, BUGLADY

Lepidopterists all know that we need specially selected plants to attract the specific butterflies and moths that we desire to observe living in their wild habitats. I enjoy visiting different gardens in all corners of our state to witness these plants in action while studying which ones the butterflies prefer and select to use in varying situations. The Catahoula Garden, full of activity and surprises, is one for your "must see" list.

Bentley, Louisiana, is an unincorporated community in Grant Parish with a population of only 722 people. Just twelve miles north of Pineville, Bentley is located off State Highway 167. Positioned inside the Kisatchie National Forest on U.S. Forest Service land, the Catahoula District station can be found on the corner of Louisiana Highway 8 and Forest Service Road 147. It overlooks the oasis garden residence of an array of birds, butterflies and important life-giving native plants that support this interesting ecosystem. A Forest Service team of employees in cooperation with a local group of volunteers, driven by the selfless mission of creating this super special place, worked together to begin building the garden in 1994. It's divided into smaller sections which in the last few years have also been tended by some local Louisiana Master Gardener volunteers. They continue to enhance the nature smorgasbord by introducing more native plants. On October 20, I did a plant inventory and the totals were 45 nectar, 38 caterpillar host and 9 non-native. Of course, each season would produce more additions for my list. Multiple Eagle Scout projects have improved the garden by helping to lay out the beds with posts and also constructing the Bat House.

The first quadrant contains a beautiful stand of Longleaf pine trees where rare Red-cockaded woodpeckers (RCW) call it home. The woodpecker cluster site was there before the garden was established. RCWs now occupy a much smaller portion of their original range and are federally listed as endangered. They have a preference for longleaf pine forest habitats that have diminished across the South due to fire suppression and intensive logging. Many of these cut areas were replaced with other pine species that grow faster. The other limiting factor is they prefer "park-like" stands of pine trees so they need old trees in open areas. The birds are rarely seen except perhaps during breeding season. The male has a small red streak on each side of its black cap called a cockade, hence the name. The common name came into use during the early 1800's when 'cockade' was regularly used to refer to a ribbon or other ornament on a hat. The RCW plays a vital role in the intricate web of life of the Southern pine forest because they are 'primary' cavity nesters, meaning they are responsible for the construction of cavities. In the Southern pine ecosystem, there are many 'secondary' cavity users that benefit from the RCW's work. RCWs are considered a 'keystone' species because use of their cavities by these animals contributes to the species richness of the pine forest. At least 27 species of vertebrates have been documented using RCW cavities, either for roosting or nesting.

Drizzling rain and fog this morning had me wondering what butterflies we might see. The meandering paths invite curiosity and adventure with flowering surprises at every turn. Fluttering around the red Turk's cap flowers, a Cloudless Sulphur was using its long tongue to probe and slurp up pollen. The sprawling lantana growing in the middle of the garden was beaconing Clouded and Ocola skippers. A beautiful freshly-hatched Red Admiral was flitting around the flower clusters and repeatedly evading my camera lens. It landed on my shorts ever-so-briefly but long enough for me to admire its beauty. Shimmering green Long-tailed Skippers were zooming about visiting and tasting a variety of blossoms.

Lisa Norman and I spent some time attempting to determine whether the six Monarchs we were excitedly watching glide about were males or females. All were females except for one. Supposedly, this weekend is the middle of Monarch migration and this is definitely an excellent fueling station. Master Gardener Jacalyn Duncan had reported to me that they have been trying to establish native milkweeds in this space. The plants were there but we couldn't find them because they had probably been chewed down by Monarch caterpillars.

The next sighting was a gorgeous Red Spotted Purple, its iridescent blue wings were glistening as it was pumping them. Its tongue was thrusting into the lantana blossoms gathering pollen. A Pipevine Swallowtail swooped in to challenge territorial rights. It is easy to confuse these two butterflies because the adults look very similar. The Pipevine caterpillar eats the pipevine plant (*Aristolochia*) which is toxic and therefore makes the butterfly taste bad to predators. The flashy colors are the message, "Don't eat me!" The Red Spotted

Purple caterpillar eats willow and cherry which tastes good, so the adult Red Spotted Purple mimics the adult Pipevine as its self-preservation technique.

The two Hackberry (Sugarberry) trees not only provide tasty berry food for the birds but also caterpillar food for four butterflies even though none of them were seen today. I feel sure the Hackberry and Tawny Emperor, Question Mark and the American Snout all reside here in other times of the year. They could have been there and just were not spotted.

The rarely seen *Zanthoxylum clava-herculis*, also known as Hercules club or Toothache tree, is one of the native alternatives to citrus for feeding Giant Swallowtail caterpillars. However, unlike evergreen citrus, the toothache tree will lose its leaves in Autumn which could pose a problem to the third generation Giant caterpillar who might run out of food if it takes too long completing its life cycle. Swallowtails usually overwinter in the pupa or chrysalis stage.

Almost at the garden's center stands a stately Catalpa tree with its long seed pods. It offers a bounty for hungry *Ceratomia cataplae*, the Catalpa Sphinx hawkmoth caterpillar, which is just one of the 58 Louisiana sphinx moths that have been studied and documented by Vernon Antoine Brou, Jr.

As we walked around the little pond, we were surprised by a green heron when it burst out of the bushes, flew to the island in the pond's center, then landed at the water's edge. A line of *Callicarpa* (Beauty Berry) loaded with pretty purple berries down its stalks provides a feast for a variety of birds.

Lisa and I quietly stood gazing at the endless acres of bright, golden *Helianthus angustifolia*. All you could hear was the wind in the swaying pine trees and the trickling sound of the little waterfall on the pond's island. Suddenly motion caught my eye. It is a beautiful Buckeye coaxing us to enter the wildflower patch. A two-foot wide path invited us to explore and follow the Buckeye. There before us we see liatris, blue lobelia, aster, and agalinis, the Buckeye caterpillar host plant. The Buckeye landed on my shoe (which has trod many a trail) and quickly began sucking fluids. Lisa and I laughed out loud as its wings began to tremble! We guessed that the mineral concoction it was siphoning must have tasted really good. Lisa observed that the plants looked beaten down and we deducted that deer must be bedding down in this area. All of their needs are met here: food, water and a quiet place to live.

The next two quadrants are more pine trees to the left and to the right are two more wildflower fields that measure ten acres each. As we were discussing the wonderful sporadic wildflower assortment growing amidst this yellow gorgeousness, I spied something on one of the sunflower centers. My heart beating a bit faster, I exclaimed, "It's a caterpillar I've never raised and I don't know what it is!" The caterpillar was positioned on the dark brown center packed with seeds. It appeared to be eating the seeds and not the flower petals. This larva is a yellow-brown mix which perfectly matches the flower colors. A row of fleshy thorns down its back resembles the seed textures. I checked my best caterpillar guide without success. After downloading the pictures later on Facebook, I received the identification within a few minutes, "Yellow Sunflower Moth", *Stiria rugifrons*. Well, that certainly makes sense.

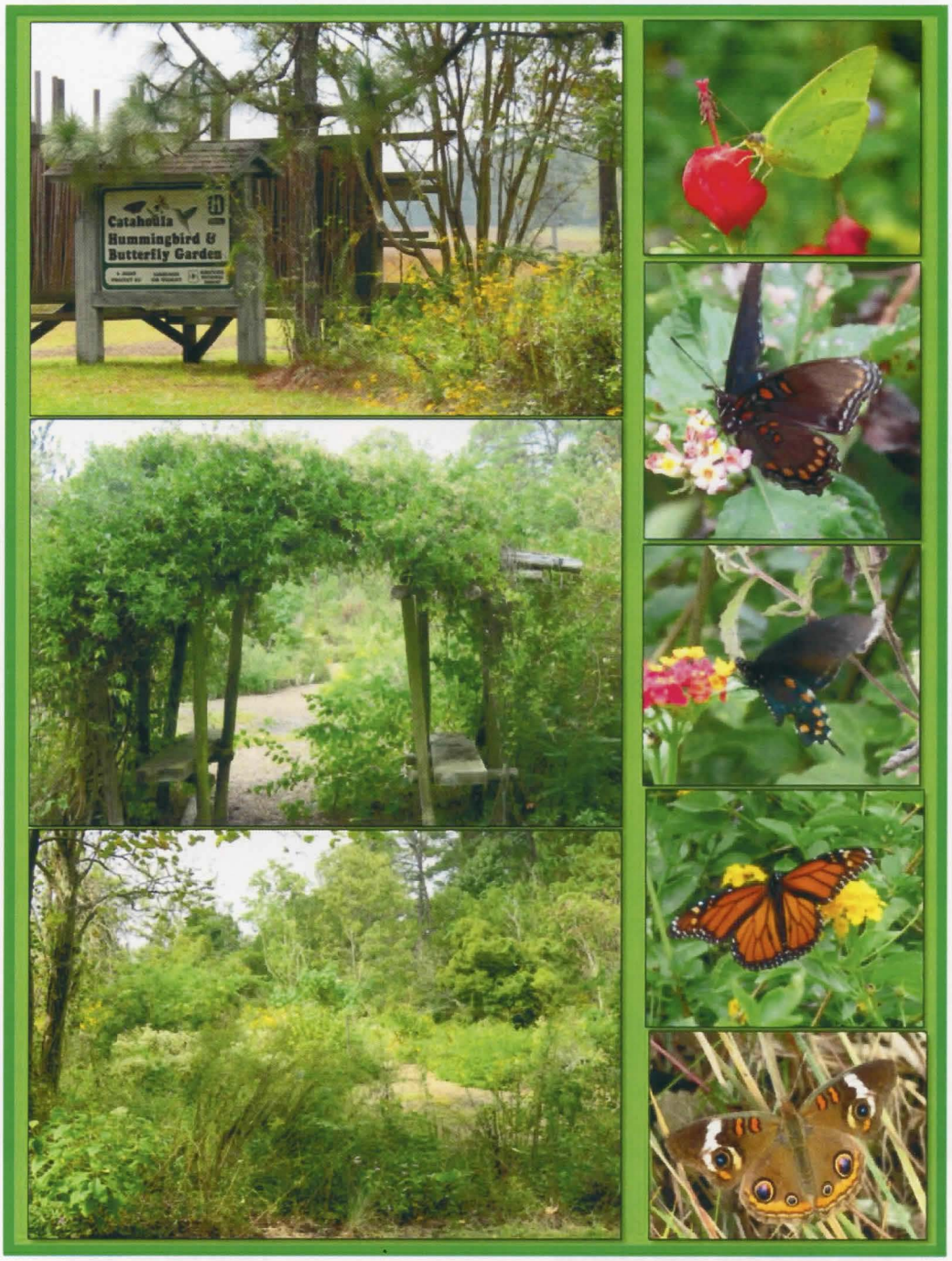
I was delighted to see my "Geaux Grow Natives!" project plants, both Spring and Fall selections, growing and thriving here. My showcase of nectar plants are Buttonbush, Garden Phlox, Cardinal flower, Slender Mountain mint, Purple coneflowers and Ironweed. The caterpillar host plants are Agalinis, Partridge Pea and Passion flower vine.

The butterfly population of the Catahoula Hummingbird & Butterfly Garden is surveyed each year for the North American Butterfly Association (NABA) by Marty Floyd, who also has the huge task of recording all of the Region 10 count data for the NABA annual report publication. Count data are also available on their website. Last year's count data totals are: Pipevine Swallowtail 8, Black Swallowtail 1, Cloudless Sulphur 110, Little Yellow 298, Sleepy Orange 1, Gray Hairstreak 20, Red-banded Hairstreak 6, Gulf Fritillary 132, Variegated Fritillary 5, Silvery Checkerspot 1, Phaon Crescent 10, Pearl Crescent 97, Common Buckeye 67, Carolina Satyr 19, Long-tailed Skipper 60, Funereal Duskywing 2, Common Checkered Skipper 12, Tropical Checkered Skipper 3, Swarthy Skipper 1, Clouded Skipper 8, Fiery Skipper 24, Whirlabout 3, Dun Skipper 2, Eufala Skipper 1, Ocola Skipper 2. Totals: 25 species, 893 individuals. Immatures: 20 Gulf Fritillary caterpillars on passion flower vine.

The Catahoula Hummingbird and Butterfly Garden offers a place for visitors to view hummingbirds and butterflies as well as other wildlife. It also provides an opportunity for volunteers to get involved in creating and maintaining a special place in their National Forest that attracts wildlife as well as tourists. · The garden is an ever-growing project and the Forest Service team is always looking for new people to get involved. Interested folks can contact Emlyn B. Smith at emlyn.smith@usda.gov

Stiria rugifrons

Yellow sunflower moth



Butterfly pictures on right from top to bottom: Cloudless Sulphur, Red Spotted Purple, Pipevine Swallowtail, Monarch, and Common Buckeye. Photos are by Linda B. Auld.

Left:
***Helianthus angustifolia* in bloom**
Pond island with small waterfall
Lisa Lambard Norman

Right:
Longleaf Pine tree stand
Linda Barber Auld
10-acre wildflower patch

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

FUN WITH HARVESTERS, *FENISECA TARQUINIUS*, II

BY

BRYAN E. REYNOLDS

In the December 31, 2018, issue of the Southern Lepidopterists' Society News (Vol. 40 NO. 4), I detailed my first encounter with a colony of harvester butterflies (*Feniseca tarquinius*), North America's only carnivorous butterfly, and a relatively elusive species. One of the behaviors that I witnessed, but was unable to capture on camera, was a female ovipositing in an aphid colony—a behavior that provides newly-hatched caterpillars with plenty of food. After this wonderful experience, I've been keeping my eye out for this unusual butterfly and keeping my camera ready in the hope of documenting this ovipositing behavior.

Harvester, *Feniseca tarquinius*, perched in sunspot in deeply shaded woods, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019.

On 7 June 2019, the next stage of this saga occurred—when I was photographing butterflies in the Lexington Wildlife Management Area in central Oklahoma. This preserve is close to where I live, so I'm very familiar with it and spend many hours exploring its 10,000-plus acres. I was searching for subjects near a lake that has a trail tracing part of its circumference.

In one particularly thick, deeply shaded section of woods, a small, fluttering butterfly caught my eye. I recognized at once it as a harvester—and by the way it was hovering and swirling around a vine, I got the sense it was a female looking for a place to lay eggs. I continued to watch as she flew higher and landed on the vine. She then curled her abdomen and laid an egg—near several tiny aphids. Unfortunately, all of this happened several feet above me and directly over a large tangle of impenetrable vegetation, so I couldn't get any photos. I was hoping she would get lower, but instead she proceeded deeper into the forest and out of sight. I waited for her to reappear, but to no avail. I was disappointed, but hopeful that I'd get another opportunity.

Harvester, *Feniseca tarquinius*, female ovipositing in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on bristly greenbrier, *Smilax tamnoides*. Notice freshly deposited egg. Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019.

Soon after my sighting, my friend and colleague Nick Grishin was visiting. He's a Professor of Biochemistry at the University of Texas Southwestern in Dallas, Texas. He specializes in sequencing the DNA of butterflies. He was interested in checking out the newly dubbed "Harvester Colony." We scoured the area, but saw no adults. However, Nick found one larva among the aphids.

On June 26, I went back to check the status of the colony. By the time I got there, I had already been photographing for several hours and I was exhausted from the heat. But I was hopeful that I would find something interesting. I hiked to the colony and immediately noticed two female harvesters swirling in that now familiar and distinctive flight. This time, they were low enough to reach with my camera. One of the butterflies landed and I started firing away. She took flight, but to my astonishment, she landed even closer to me! My heart was pounding as I fired off frame after frame. It was remarkable to see this behavior through my macro lens. The butterfly worked the vine, landing and curling her abdomen and then popping out an egg. All the while, I kept working hard to get photos while standing knee-deep in poison ivy. I was soaked in sweat and mosquitoes were pestering me because my repellent was wearing off. I was exhausted, but I was having the time of my life. After several more photos, she moved into deeper woods and by this time, I was ready to get back to my vehicle for a cold drink.

Harvester, *Feniseca tarquinius*, ova freshly deposited in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on bristly greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019.

Woolly Maple Aphid, *Neoprociphilus aceris*, colony on bristly greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019.

Harvester, *Feniseca tarquinius*, larva among Woolly Maple Aphid, *Neoprociphilus aceris*, colony on bristly greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 June 2019.

Harvester, *Feniseca tarquinius*, perched in sunspot in deeply shaded woods, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019.

As I dragged myself along the return trail, something made me stop and look up. About one foot from my face was one of the freshest harvesters I've ever seen. It was perched on a leaf that was in a sunspot in otherwise deeply shaded woods. To avoid flushing it, I slowly backed up and started to fire off frames. I completely forgot about my fatigue as I worked this stunning butterfly. It was very cooperative and allowed me to get both ventral sides. After several frames, the sun went behind a cloud and as I was looking through my viewfinder, the butterfly opened up showing its magnificent upper side. I couldn't believe it—this was the icing on the cake of what was already a spectacular day.

It's been exciting photographing this fascinating species, and I've been honored to witness and document its behavior. I also want to extend my thanks to Nick and to the experts who helped me identify the non-butterfly subjects in my photos. The host aphids were identified by Natalie Hernandez, entomologist and aphid specialist for the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), as woolly maple aphids (*Neoprociphilus aceris*). And the host plant has been identified as bristly greenbrier (*Smilax tamnoides*) by Amy Buthod of the University of Oklahoma.

As of the writing of this blog for the Xerces Society, I went out on 7 July to check on the colony and I was able to capture some more images of a female Harvester ovipositing as well as a single individual perched in a sunspot.

Harvester, *Feniseca tarquinius*, female ovipositing in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on bristly greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 July 2019.

Harvester, *Feniseca tarquinius*, female ovipositing in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on bristly greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 July 2019.

Harvester, *Feniseca tarquinius*, perched in sunspot in deeply shaded woods, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019.

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[This article by Bryan E. Reynolds appeared in the Xerces Society blog on 21 August 2019.]

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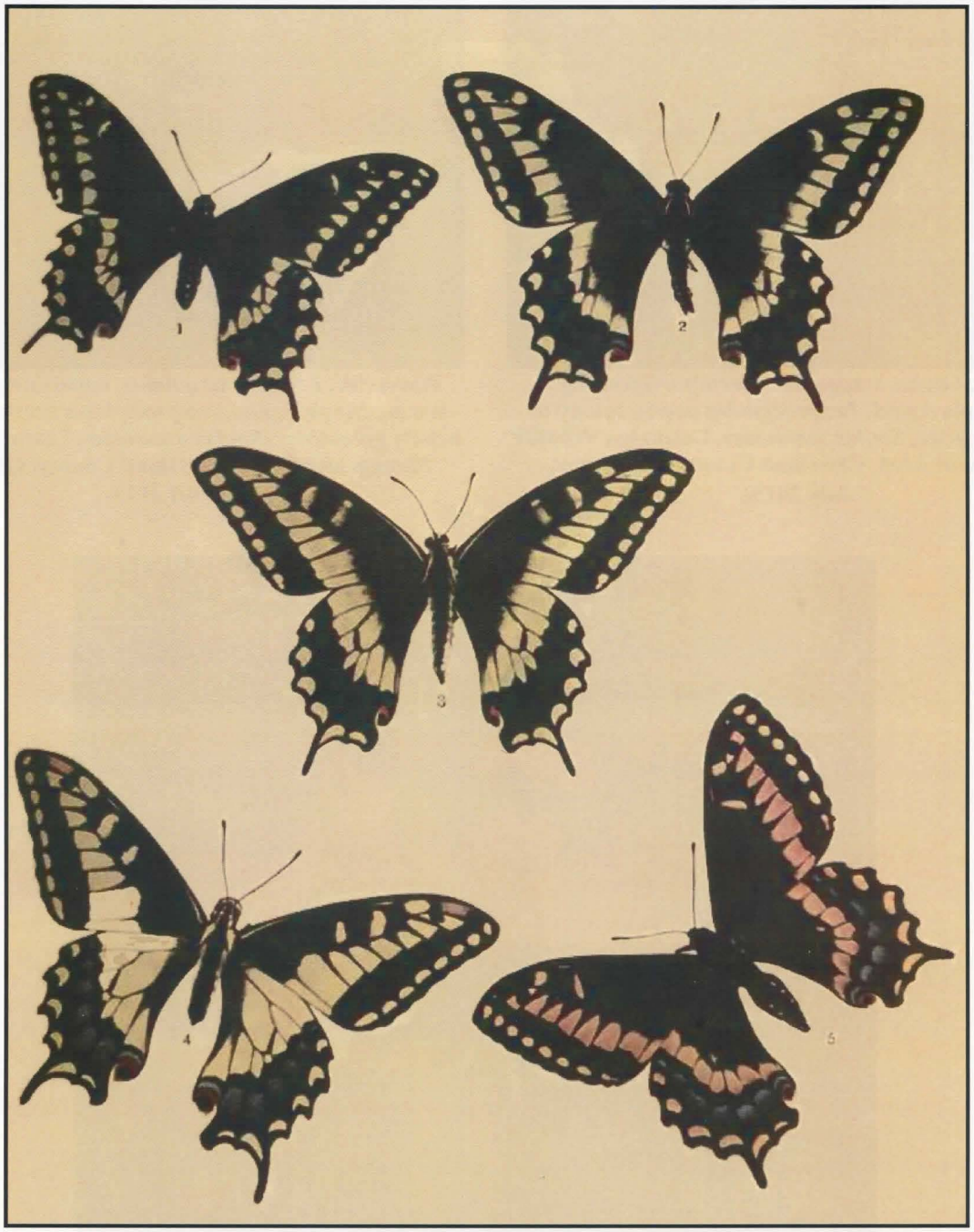

EXPLANATION OF PLATE XL

1. *Papilio asterias,* Cramer, ♂.
2. *Papilio bairdi,* Edwards, ♂.
3. *Papilio hollandi,* Edwards, ♂.
4. *Papilio brucei,* Edwards, ♂.
5. *Papilio brevicauda,* Saunders, ♀.

THE BUTTERFLY BOOK **by W.J. Holland, Plate XL, Doubleday, Page & Company, 1914.**

CLEARWING MOTHS (SESIIDAE) IN SOUTHEASTERN GEORGIA, USA

BY

LANCE A. DURDEN AND ALAN HARVEY

The clearwing (or wasp) moths (Sesiidae) of Georgia are fairly well known based largely on pheromone trapping programs in central Georgia by Snow et al. (1985) and species accounts in *Georgia Lepidoptera*. Records of sesiid moths in Georgia are also included in Eichlin and Duckworth (1988), in *Moth Photographers Group*, and in some other sources. Snow et al. (1985) recorded 22 species of sesiids in the Byron area of central Georgia (Peach and Houston counties) whereas 42 species are documented for the entire state of Georgia in *Georgia Lepidoptera*.

For the past ~7 years, we have recorded clearwing moths on and adjacent to the campus of Georgia Southern University in Statesboro (Bulloch county), Georgia, USA. Recording has involved setting pheromone traps (Great Lakes IPM Inc., Vestaburg, MI) (Fig. 1) baited with pheromone lures L103 or L119 (Scentry Biologicals Inc., Billings, MT) hung ~1 m above the ground, and visual observations. A few sesiids were also attracted to bait traps baited with rotting fruit or nocturnally to U.V. lights positioned over white sheets.

Fig. 1. Clear pheromone trap, baited with synthetic pheromone lure as used in this survey.

Photographed or captured sesiids were identified by comparing them to images in Eichlin and Duckworth (1988), Brown and Mizell (1993), *Georgia Lepidoptera* and *Moth Photographers Group*. Voucher specimens are deposited in the Georgia Southern University Insect Collection. The following annotated list provides information on the 16 species of sesiids we have recorded during this survey.

ANNOTATED LIST OF SESIIDAE RECORDED IN BULLOCH COUNTY, GEORGIA

*Asterisks denote species for which there are currently no Georgia records on *Moth Photographers Group* (MPG). MONA = *Moths of North America* number. Pohl et al. (2016) numbers are also listed.

***Paranthrene asilipennis* (Boisduval, 1829)** (Oak clearwing moth) (MONA 2522; Pohl et al. No. 640058)

Months recorded: March, April.

Distribution: Eichlin and Duckworth (1988) reported the range of this species as being from Massachusetts to Wisconsin and south to Florida and eastern Texas. Current MPG records include the states of Florida, Georgia, Kentucky, Michigan, New Hampshire, Pennsylvania and Texas.

Notes: We recorded only three specimens of this large sesiid. Snow et al. (1985) recorded *P. asilipennis* in the months of April and May in central Georgia.

***Paranthrene tabaniformis* (Rottemburg, 1773)** (European poplar clearwing moth) (MONA 2524; Pohl et al. No. 640063).

Month recorded: September.

Distribution: Eichlin and Duckworth (1988) stated that this species is distributed in the eastern half of the U.S. and westwards to the Midwest as well as the Rocky mountains, southern Canada and Alaska. Current MPG state/province records include Colorado, Florida, Illinois, Maine, Massachusetts, Michigan, Ohio, Oklahoma, Pennsylvania, Texas, and Nova Scotia. Snow et al. (1985) also reported *P. tabaniformis* from Georgia.

Notes: We did not record this Holarctic species in our survey but there is a single pinned specimen in the GSU Insect Collection labeled, "Bulloch Co., 5 mi W. Statesboro, 14.IX.1984, Frank E. French." Snow et al. (1985) recorded *P. tabaniformis* only in May in central Georgia.

***Paranthrene simulans* (Grote, 1881)** (Red oak clearwing moth) (MONA 2527; Pohl et al. No. 640059).

Months recorded: April, May, June, July.

Distribution: Reported from Nova Scotia to Minnesota and south to Florida and Texas by Eichlin and Duckworth (1988). Current MPG records are from almost all states east of the Mississippi River including Georgia.

Notes: This species was abundant in our survey with scores of recorded specimens during late spring and early summer. In central Georgia, Snow et al. (1985) only recorded *P. simulans* in the months of April and May.

***Melittia cucurbitae* (Harris, 1828)** (Squash vine borer moth) (MONA 2536; Pohl et al. No. 640081).

Months recorded: June, July.

Distribution: This species occurs across eastern North America south to eastern Texas and disjunctly southwards to Veracruz, Mexico according to Eichlin and Duckworth (1988). Current MPG records are from almost all states in the eastern half of the U.S.

Notes: We recorded *M. cucurbitae* in late spring and early summer especially near gardens where squash was growing. Eichlin and Duckworth (1988) stated that it has been recorded from April through November in the southern part of its range where it is at least double-brooded.

***Synanthedon scitula* (Harris, 1839)** (Dogwood borer moth) (MONA 2549; Pohl et al. No. 640090).

Months recorded: April, May.

Distribution: Eichlin and Duckworth (1988) reported this species throughout the eastern half of the U.S. and from southern Canada. Current MPG records are from almost all of the eastern states (including Georgia) as far west as eastern Texas and also from Colorado and Washington state.

Notes: We recorded this species in pheromone traps, at light, and in a bait trap. Snow et al. (1985) recorded it from April through November in central Georgia.

***Synanthedon pictipes* (Grote & Robinson, 1868)** (Lesser peachtree borer moth) (MONA 2550; Pohl et al. No. 640091).

Months recorded: July, September.

Distribution: According to Eichlin and Duckworth (1988), *S. pictipes* occurs in the eastern half of North America from Nova Scotia south to Florida and as far west as Minnesota and Texas. Current MPG records are from almost all of the eastern states (including Georgia) as far west as eastern Texas and also from Colorado and Alberta.

Notes: Because of its feeding habits, this moth has economic importance for peach crops in Georgia and some other states. Snow et al. (1985) recorded this species in fairly large numbers in central Georgia, and from April through December.

****Synanthedon rileyana* (Edwards, 1881)** (Riley's clearwing moth) (MONA 2552; Pohl et al. No. 640093).

Month recorded: July.

Distribution: Eichlin and Duckworth (1988) recorded this species from New York state south to Florida and westwards to Wisconsin, Kansas, Texas and Arizona. Current MPG records are from almost all of the eastern states (but not Georgia) as far west as Texas.

Notes: Snow et al. (1985) recorded *S. rileyana* from June through November in central Georgia.

***Synanthedon acerni* (Clemens, 1860)** (Maple callus borer moth) (MONA 2554; Pohl et al. No. 640095) (Fig. 2).

Fig. 2. *Synanthedon acerni*, dorsal and lateral views, Statesboro, Georgia, July 2015 (photos by A. Harvey).

Months recorded: February, March, April, June, July.

Distribution: Eichlin and Duckworth (1988) stated that the distribution of *S. acerni* closely matches that of its host tree, red maple, i.e., from the east coast of North America, to the Mississippi valley, southern Canada (Nova Scotia to Ontario) and south to the Gulf coast. Current MPG records are from all states in the eastern half of the U.S. except Vermont and Virginia, with additional records in southeastern Canada.

Notes: We recorded this species in pheromone traps and also at light sheets at night. Eichlin and Duckworth (1988) stated that *S. acerni* is one of the few sesiids that is regularly attracted to blacklights. Snow et al. (1985) recorded it in April and May and also in October and November in central Georgia.

***Synanthedon fatifera* Hodges, 1962** (Lesser viburnum clearwing moth) (MONA 2555; Pohl et al. No. 640096).

Months recorded: June, July, August, September.

Distribution: Eichlin and Duckworth (1988) reported *S. fatifera* from southern Ontario south to northern Florida and also reported a single specimen from Idaho. Current MPG state/province records are from Florida, Georgia, Illinois, Louisiana, Michigan, Minnesota, West Virginia, Wisconsin, Alberta and Québec.

Notes: The phenology reported by Eichlin and Duckworth (1988) for this species is late April through July with most records in May which differs slightly from the seasonality we recorded in southeastern Georgia.

***Synanthedon rubrofascia* (Edwards, 1881)** (Tupelo clearwing moth) (MONA 2567; Pohl et al. No. 640109).

Months recorded: March, April, May, June, July, September.

Distribution: Eichlin and Duckworth (1988) listed the distribution of *S. rubrofascia* as being along the U.S. Gulf Coast from Louisiana to Florida and north along the Atlantic coast to Maryland with additional records from Tennessee, Michigan, Indiana and Massachusetts. Current MPG records are mostly from the southeastern U.S. (including Georgia) but with scattered records as far north as Pennsylania and southern Michigan.

Notes: Snow et al. (1985) recorded this species from April through November in central Georgia.

***Synanthedon decipiens* (Edwards, 1881)** (Oakgall borer moth) (MONA2571; Pohl et al. No. 640114).

Months recorded: April, August, September.

Distribution: Eichlin and Duckworth (1988) stated that *S. decipiens* is a widespread species that occurs from the Rocky mountains to the Atlantic and Gulf coasts. Current MPG records are from most of the eastern U.S. as far west as Texas.

Notes: Snow et al. (1985) recorded *S. decipiens* from May through September in central Georgia.

***Synanthedon sapygaeformis* (Walker, 1856)** (Florida oakgall moth) (MONA 2573; Pohl et al. No. 640115) (Fig. 3).

Months recorded: August, September.

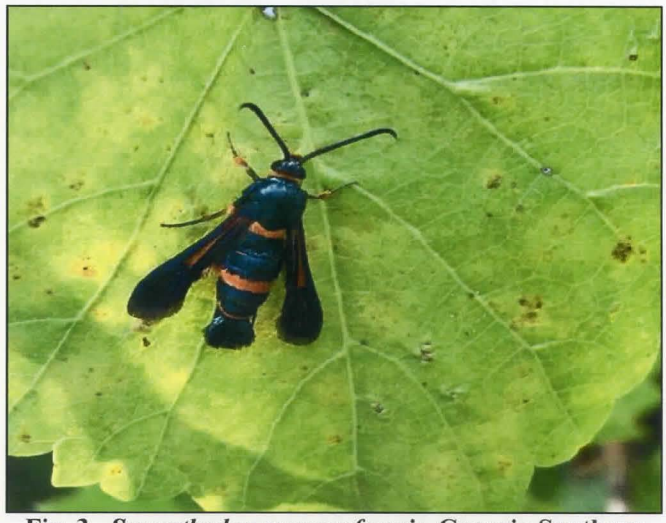

Fig. 3. *Synanthedon sapygaeformis*, Georgia Southern University campus, Statesboro, GA, September 2019 (photo by A. Harvey).

Distribution: Eichlin and Duckworth (1988) listed the distribution as being "throughout subtropical Florida" for this species. Current MPG records are only from Florida and near the Gulf coast in Texas. Heppner (2003) records this species from Florida, Georgia and Texas and lists Alabama as an additional likely state for its presence.

Notes: In Florida, Heppner (2003) reports *S. sapaegyformis* from 10 months of the year. Blaine (2015) recorded 417 adults throughout his trapping period (November through March) at one site in Brevard county, Florida using L103 pheromone lures.

***Synanthedon exitiosa* (Say, 1823)** (Peachtree borer moth) (MONA 2583; Pohl et al. No. 640124) (Fig. 4).

Months recorded: May, June, August, September, October.

Fig. 4. Male *Synanthedon exitiosa* resting on oak trunk during a rainstorm, Statesboro, Georgia, June 2013 (photo by Lance Durden).

Distribution: Eichlin and Duckworth (1988) reported the distribution of *S. exitiosa* to be the U.S. and southern Canada, excluding most of the Great Plains, Great Basin, and desert southwest. Current MPG records are across the USA (except for some northwestern and north-central states) as well as southern British Columbia.

Notes: This species has economic importance for peach crops in Georgia and some other states. It is a polymorphic and dimorphic species and males we recorded in southeastern Georgia (Fig. 4) closely resemble the form listed and illustrated as *Synanthedon exitiosa "barnesi"* (Beutenmüller) by Eichlin and Duckworth (1988). This was the most common sesiid in our survey with hundreds of specimens recorded in pheromone traps and a few observed on vegetation or tree trunks. Snow (1985) recorded it from May through November in central Georgia.

***Podosesia aureocincta* (Purrington & Nielson, 1977)** (Banded ash clearwing moth) (MONA 2588; Pohl et al. No. 640131).

Months recorded: August, October.

Distribution: Eichlin and Duckworth (1988) stated that *P. aureocincta* occurs from New York city south to central Florida and west to Indiana, Missouri and Texas. Current MPG state records are for Florida, Georgia, Indiana, Kentucky, Louisiana, Minnesota, Mississippi, Ohio, Texas and West Virginia.

Notes: Snow et al. (1985) recorded this species from April through December in central Georgia.

****Podosesia syringae* (Harris, 1839)** (Ash clearwing moth) (MONA 2589; Pelham No. 640130)

Months recorded: March, April, May, June, July, August, September.

Distribution: Eichlin and Duckworth (1988) reported the range of *P. syringae* to be from Nova Scotia south to Florida, and west to eastern Alberta, Utah, Colorado and central Texas, with a population in central California, and another specimen from Washington state. Current MPG records are from much of the USA (excluding Georgia) as well as Alberta and southern British Columbia.

Notes: This was the second most common sesiid in our survey with hundreds of recorded specimens in pheromone traps, especially from March through May, although there were a few specimens as late as the last week of September. Snow et al. (1985) recorded it from April through July in central Georgia.

****Sannina uroceriformis* Walker, 1856** (Persimmon borer moth) (MONA 2590; Pohl et al. No. 640132).

Months recorded: May, June.

Distribution: Eichlin and Duckworth (1988) reported *S. uroceriformis* from New Jersey south to Florida, and more commonly along the Gulf Coast and Mississippi valley, extending west to Montana, Colorado and western Texas. Current MPG state records are for Florida, Illinois, Louisiana, Mississippi, Missouri, Oklahoma, South Carolina, Texas, and West Virginia.

Notes: We recorded only four specimens of *S. uroceriformis*, all in pheromone traps baited with L103 lures, despite the abundance of wild persimmon trees in some of the survey sites. Snow et al. (1985) recorded this species from May through August in central Georgia.

Overall, we recorded 16 species of sesiids in our survey in and around the GSU campus in Statesboro, Bulloch county, Georgia. Snow et al. (1985) recorded 22 species in their survey in and around Byron in Peach and Houston counties, Georgia, which is ~140 miles (~225 km) west of Statesboro. We plan to use different pheromone lures for specific sesiid species in the future, which may increase the known species diversity of clearwing moths in Bulloch county. The species composition between our survey and the Snow et al. (1985) survey was different. Snow et al. (1985) recorded the following nine species that we did not record:

1) *Paranthrene dollii* (Neumögen, 1894) (Poplar clearwing moth) (MONA 2523; Pohl et al. No. 640062) (recorded from May through October).

2) *Vitacea scepsiformis* (Edwards, 1881) (Lesser grape root borer moth) (MONA 2531; Pohl et al. No. 640066) (recorded from July through October).

3) *Synanthedon rhododendri* (Beutenmüller, 1909) (Rhododendron borer moth) (MONA 2551; Pohl et al. No. 640092) (recorded only in May).

4) *Synanthedon alleri* (Engelhardt, 1946) (no common name) (MONA 2557; Pohl et al. No. 640098) (recorded from May through August).

5) *Carmenta anthracipennis* (Boisduval, 1875) (Blazing star clearwing moth) (MONA 2592: Pohl et al. No. 640134) (recorded in August and September).

6) *Carmenta bassiformis* (Walker, 1856) (Ironweed clearwing moth) (MONA 2596; Pohl et al. No. 640139) (recorded only in August).

7) *Carmenta odda* Duckworth & Eichlin, 1977 (no common name) (MONA 2603; Pohl et al. No. 640150) (recorded only in June).

8) *Carmenta texana* (Edwards, 1881) (Texana clearwing moth) (MONA 2614; Pohl et al. No. 640161) (recorded only in October).

9) *Alcathoe carolinensis* Engelhardt, 1925 (Clematis borer moth) (MONA 2622, Pohl et al. No. 640174) (recorded in July and August).

None of these nine species were particularly common in their samples; combined they represented only about 1% of their total captures. Only single specimens of *S. rhododenri, C. bassiformis, C. odda*, and *C. texana* were collected, along with a dozen or fewer specimens of *C. antracipennis* and *A. carolinensis*. Thus, it is possible that these are simply rare species with a low probability of capture in our region. The three species most commonly collected by Snow et al. (1985) but not by us were *P. dollii* (120 specimens), *V. scepsiformis* (85), and *S. alleri* (97). Virginia creeper (*Parthenocissus quinquefolia*), the main host of *V. scepsiformis*, is common in Bulloch county. The main host of *P. dollii*, Eastern cottonwood (*Populus deltoides*), is not recorded from either Bulloch or Peach counties except as an occasional ornamental. This sesiid is also reported to feed on willows; black willow (*Salix nigra*) is locally common in both regions; in addition, coastal plain willow (*S. caroliniana*) is present in Bulloch county and prairie willow (*S. humilis*) is reported from Houston county, although neither of these species is abundant. In any case, it has apparently not been confirmed that any of these *Salix* species are being used by *P. dollii* in the Southeast. Curiously, although *S. alleri* is apparently fairly abundant in central Georgia, its host remains unknown. The pheromone lures reported by Snow et al. (1985) for attracting these three species were ZZOH, EZOH, ZZA-EZOH (for *P. dollii*), 99% ZZA, ZZA-ZZOH (for *S. alleri*), and ZZA-EZA, ZZA, ZZA-EZOH, ZZA-ZZOH (for *V. scepsiformis*) which presumably differ from the two commercial lures we used.

Conversely, we recorded the following three species in southeastern Georgia that Snow et al. (1985) did not record in central Georgia:

1) *Melittia cucurbitae*.

2) *Synanthedon sapygaeformis*.

3) *Synanthedon fatifera*.

Perhaps our records of *S. sapygaeformis* are the most interesting reported here because we have only seen this species in 2018 and 2019 in southeastern Georgia and in larger numbers in 2019. Geographical records for this moth on *Moth Photographers Group* are only from Florida and southeastern Texas but it is recorded from Georgia by Heppner (2003) and in *Georgia Lepidoptera*. Perhaps this moth has been expanding its range into regions north of Florida in recent years. Its hosts are larger woody oak galls of cynipid wasps, especially *Andricus* spp., although as is often the case for this family of moths, species-level preferences are unknown. Future records from the southeastern states, including Georgia, may answer these questions.

Acknowledgments

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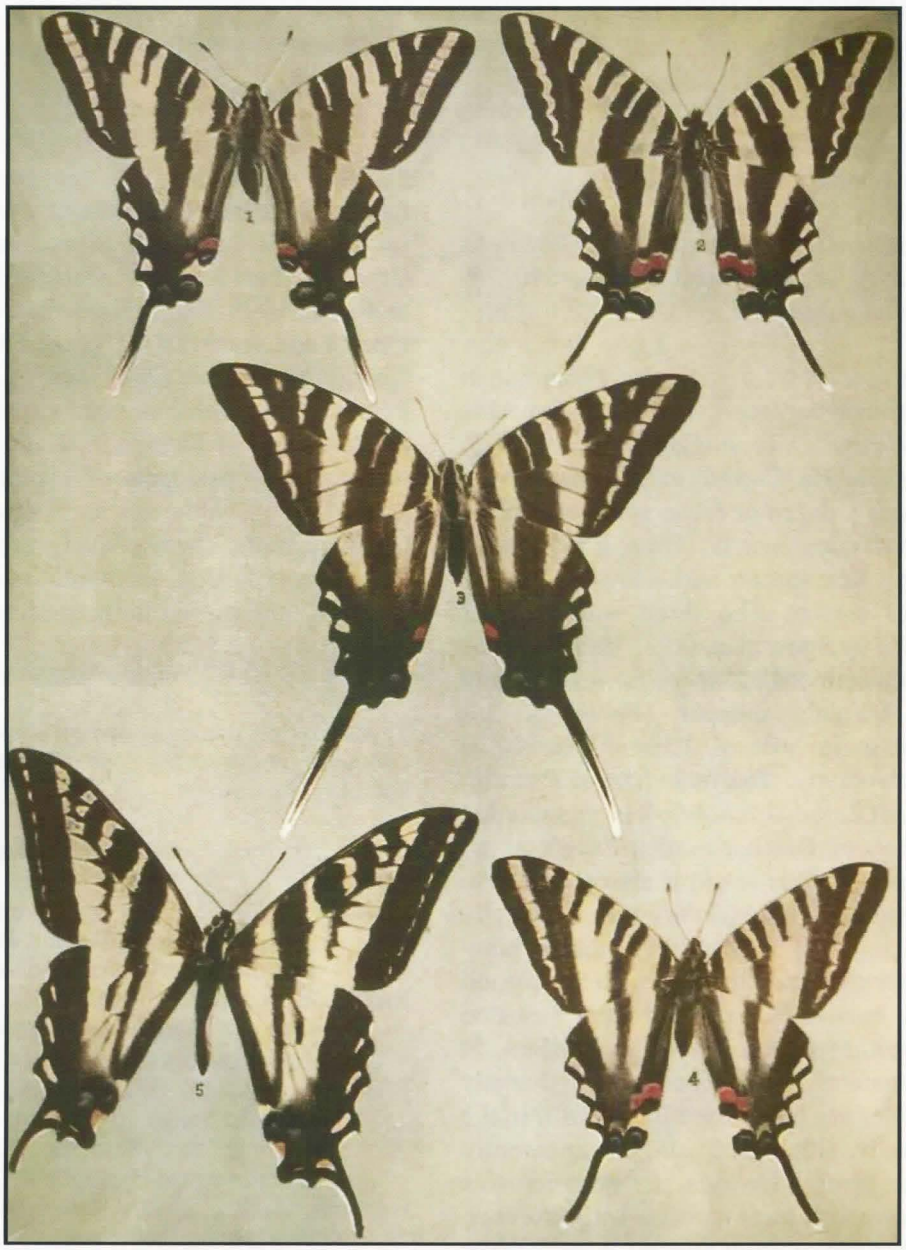

EXPLANATION OF PLATE XLIV

1. *Papilio ajax,* Linnæus, var. *telamonides,* Felder, ♂.
2. *Papilio ajax,* Linnæus, var. *floridensis,* Holland, ♂. (This is the dark form found in Florida in the early spring.)
3. *Papilio ajax,* Linnæus, var. *marcellus,* Boisduval, ♂.
4. *Papilio ajax,* Linnæus, var. *walshi,* ♂.
5. *Papilio eurymedon,* Boisduval, ♂.

***THE BUTTERFLY BOOK* by W. J. Holland, Plate XLIV, Doubleday, Page & Company, 1914.**

SKIPPERS (HESPERIIDAE) OF ARKANSAS

BY

HERSCHEL D. RANEY, JR., AND COLLABORATORS

Presented on the following pages is a gallery of distributional maps representing all 65 species of skippers known to have been recorded in Arkansas (**Fig. 1**). The "Butterflies of Arkansas" website [http://www.hr-rna.com/RNA/Butterfly%20main.htm], on which the maps are based, is in every respect a work-in-progress. In an on-going effort to make the maps more accurate and useful, input is welcome and invited from field workers, museum specialists, and others, particularly those making observations in underrepresented portions of the state.

A key to symbols (colored dots) used on the maps is provided at the end of this report. Records found suitable for inclusion come from specimen vouchers, sharp digital photographs which allow identification, and reporting from a cadre of seasoned observers.

Technical nomenclature used, and the sequence in which taxa are arranged in this report, follows Pelham's monumental 2008 treatise (*A catalogue of the butterflies of the United States and Canada with a complete bibliography of the descriptive and systematic literature*, J. Res. Lep. 40: xiv + 658 pp.). In 3 cases, species names have been updated, reflecting current use (*E. tamenund* [Fig.66], *Copaeodes aurantiaca, C. minima*).

In the legend beneath each figure, the species' unique **P** number (*i.e.,* from Pelham 2008) is given, followed by the particular taxon's Hodges (1983) 'MONA' number in brackets with the prefix **H83**. An asterisk (*) placed to the right of a **P** number indicates that the particular species is regarded as a stray or vagrant in the state (11 cases).

Sincerest thanks are extended to participants in this effort, whose contributions have come from all over the state. A list of names is provided below, along with a key to colored dots indicating the sources of information on which the maps are based.

Fig. 1. Topography of Arkansas [www.worldatlas.com].

DISTRIBUTIONAL MAPS OF ALL 65 SPECIES OF ARKANSAS SKIPPERS

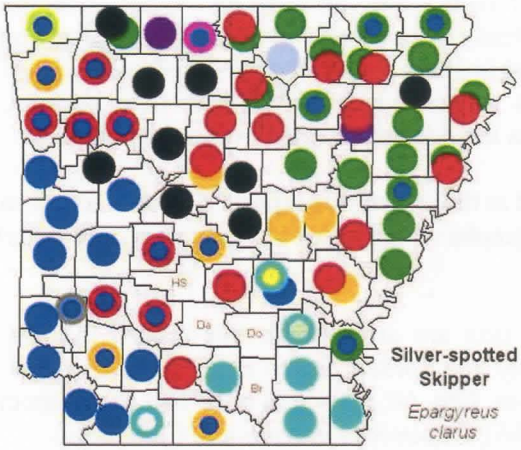

Fig. 2. P6 [H83:3870]

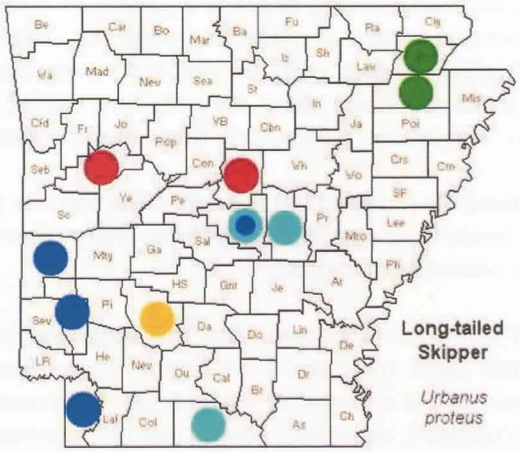

Fig. 3. P22 [H83:3886]

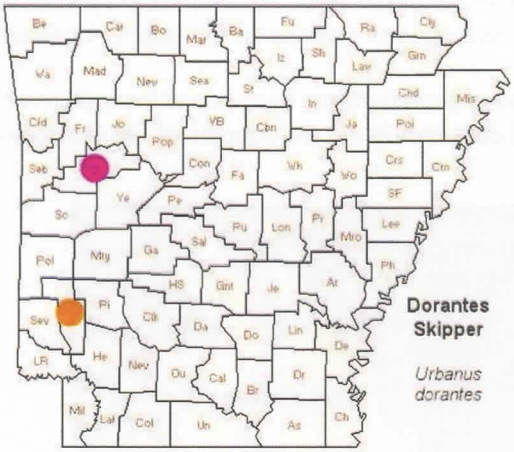

Fig. 4. P26* [H83:3889]

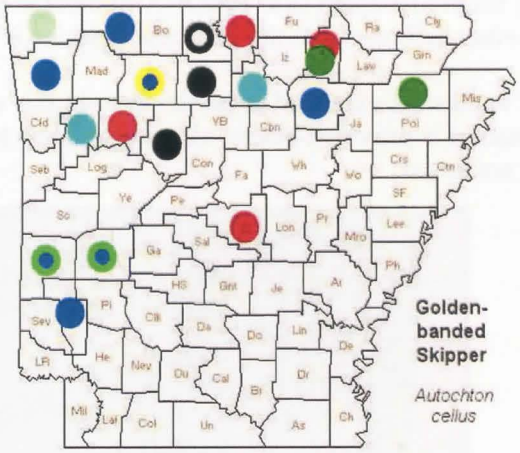

Fig. 5. P37 [H83:3902]

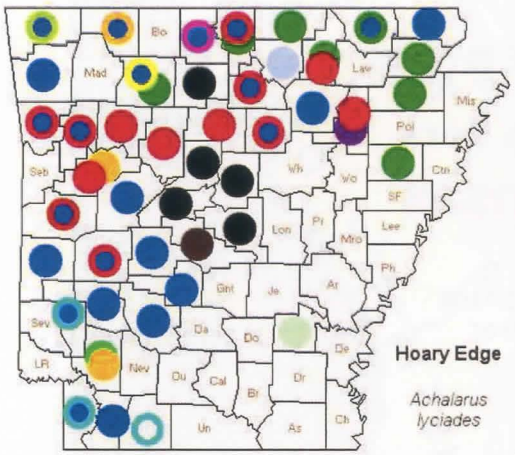

Fig. 6. P40 [H83:3904]

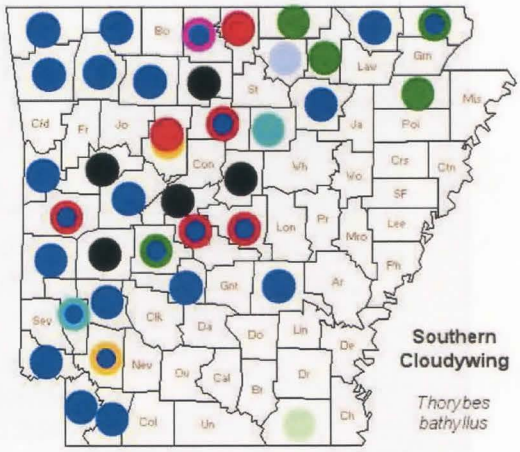

Fig. 7. P46 [H83:3909]

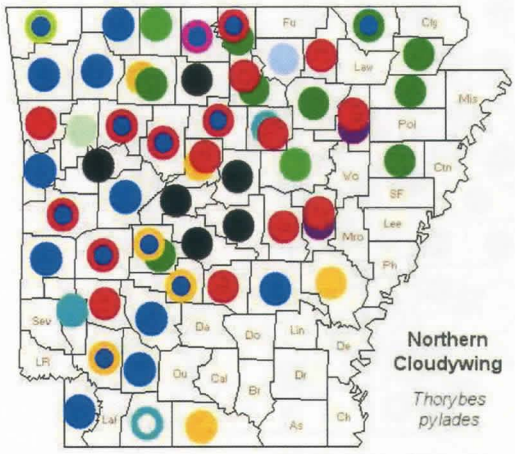

Fig. 8. P47 [H83:3910]

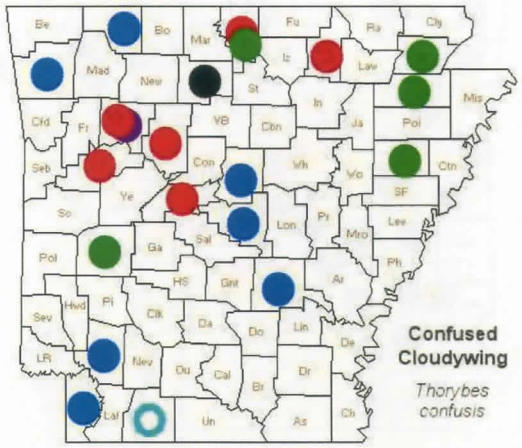

Fig. 9. P48 [H83:3913]

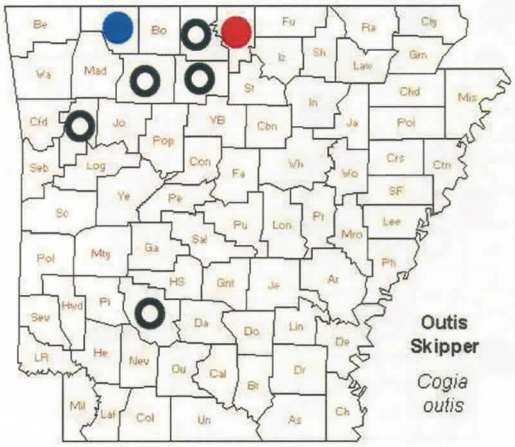

Fig. 10. P54* [H83:3923]

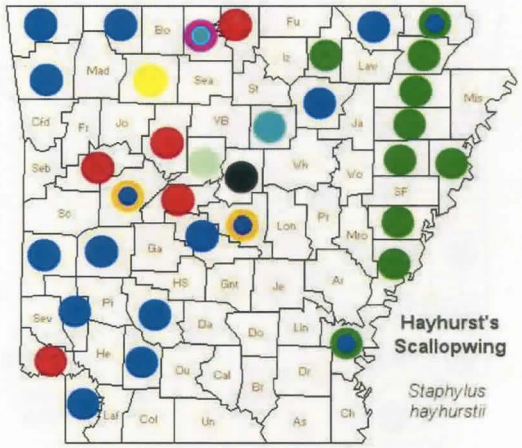

Fig. 11. P70 [H83:3932]

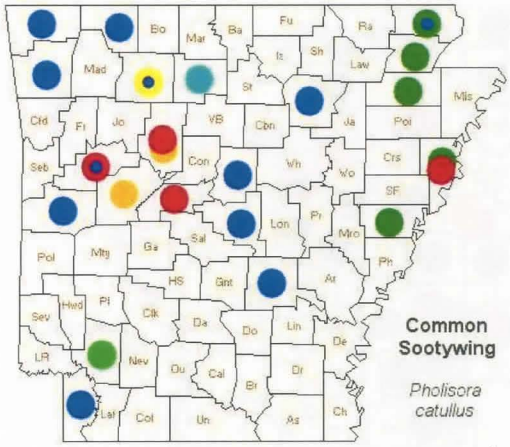

Fig. 12. P71 [H83:3977]

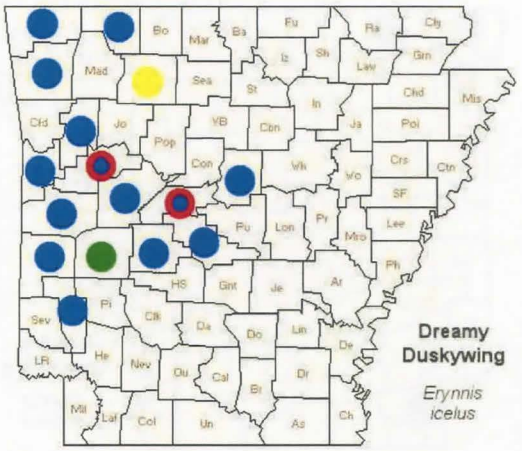

Fig. 13. P86 [H83:3945]

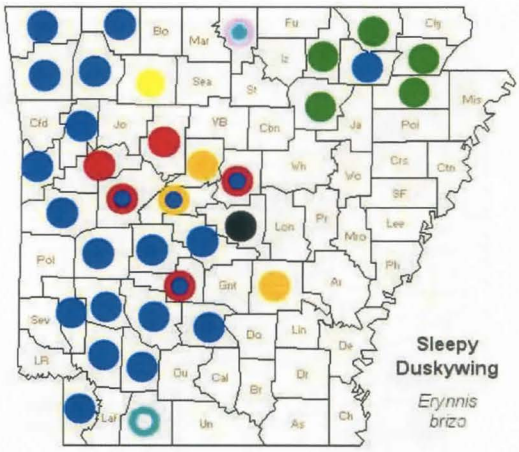

Fig. 14. P87 [H83:3946]

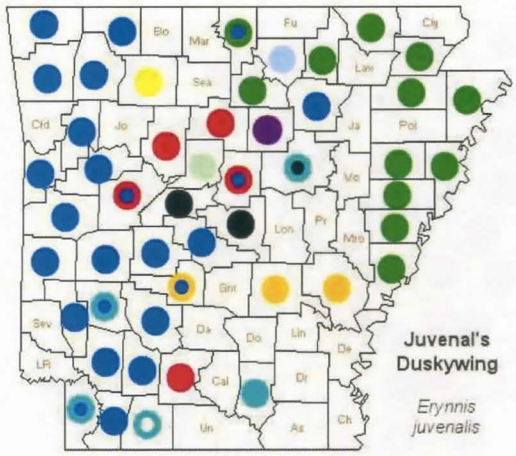

Fig. 15. P88 [H83:3947]

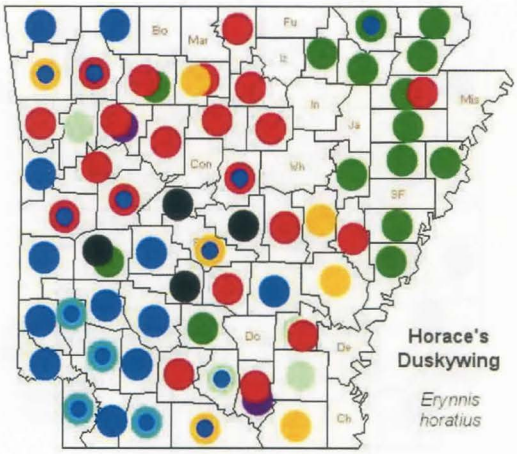

Fig. 16. P93 [H83:3952]

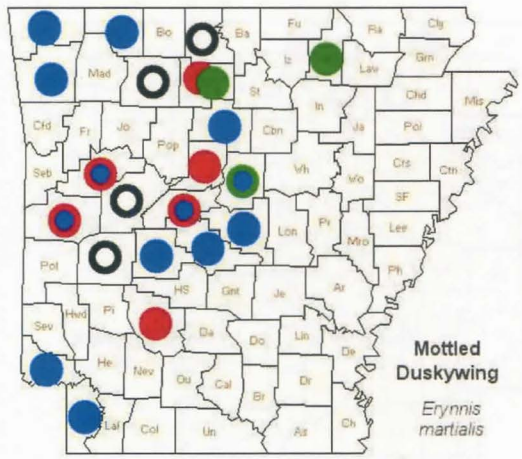

Fig. 17. P95 [H83:3954]

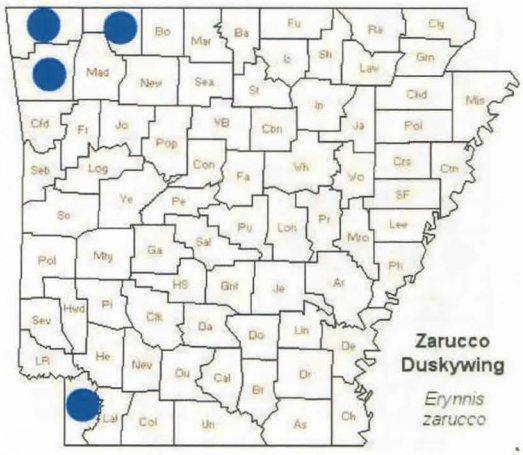

Fig. 18. P97* [H83:3956]

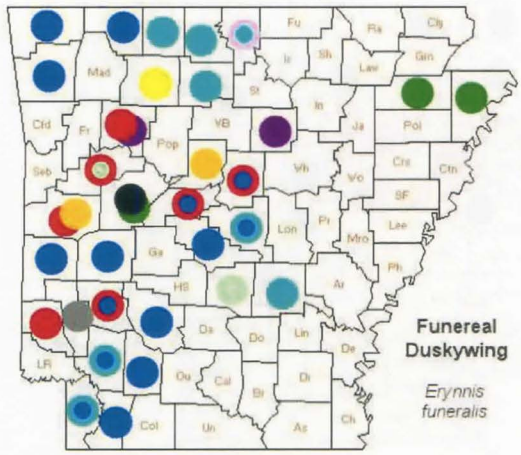

Fig. 19. P98 [H83:3957]

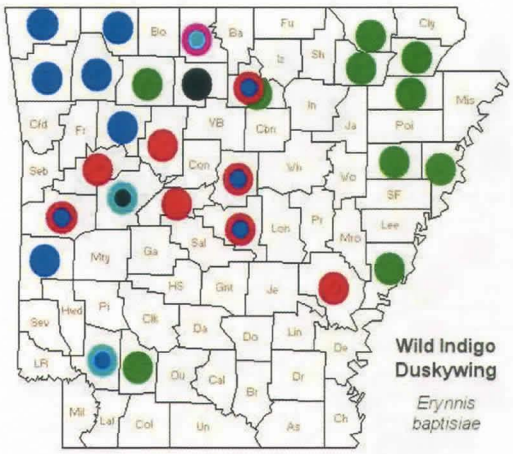

Fig. 20. P99 [H83:3959]

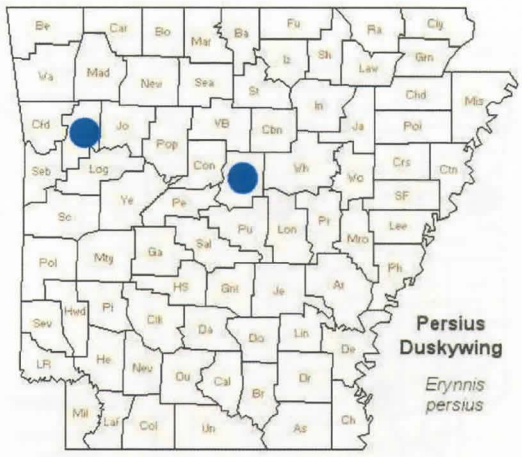

Fig. 21. P102* [H83:3961]

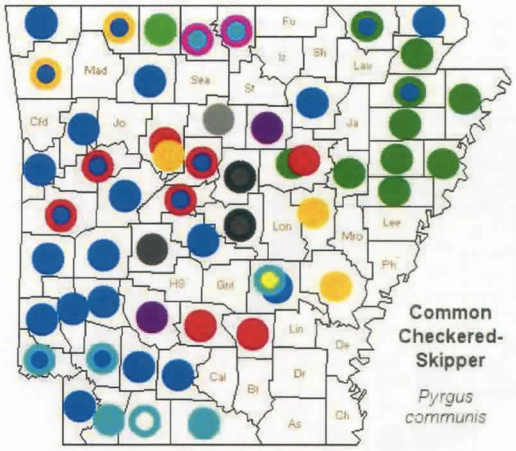

Fig. 22. P117 [H83:3966]

Fig. 23. P119* [H83:3969]

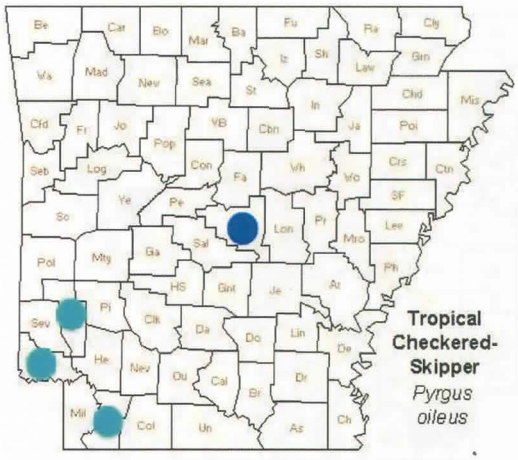

Fig. 24. P120* [H83:3968]

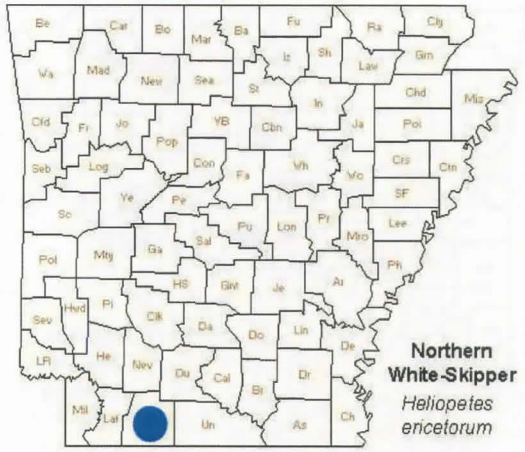

Fig. 25. P123* [H83:3971]

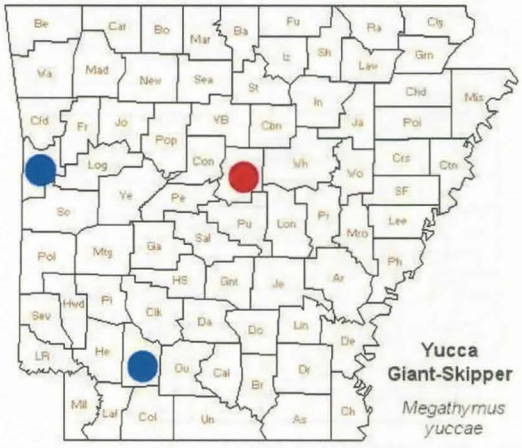

Fig. 26. P**144** [H83:4145]

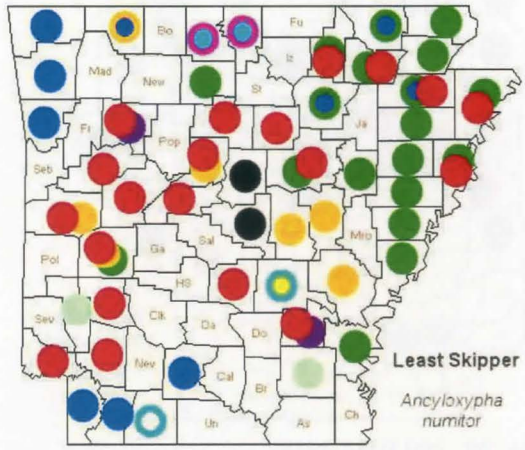

Fig. 27. P**151** [H83:4004]

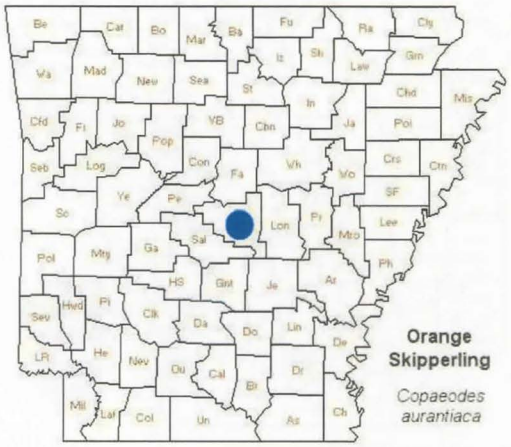

Fig. 28. P**156*** [H83:4009]

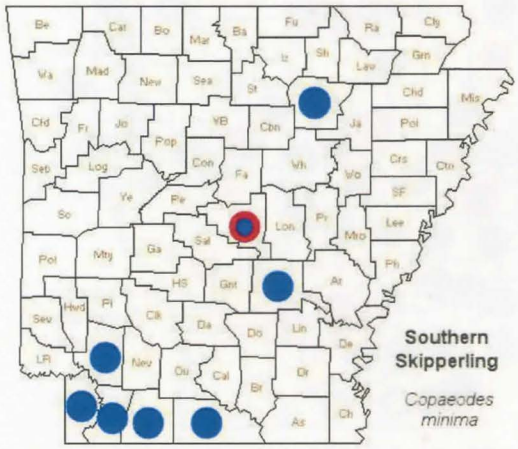

Fig. 29. P**157** [H83:4010]

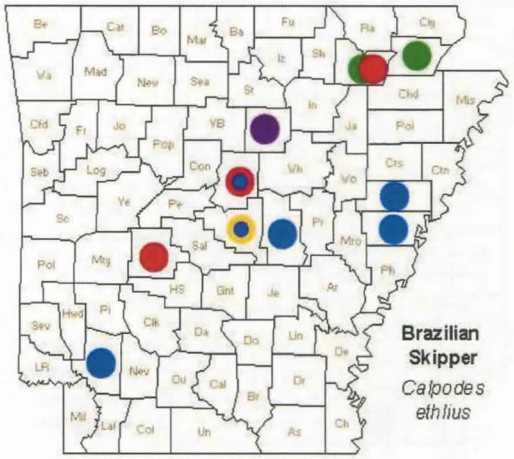

Fig. 30. P**160** [H83:4115]

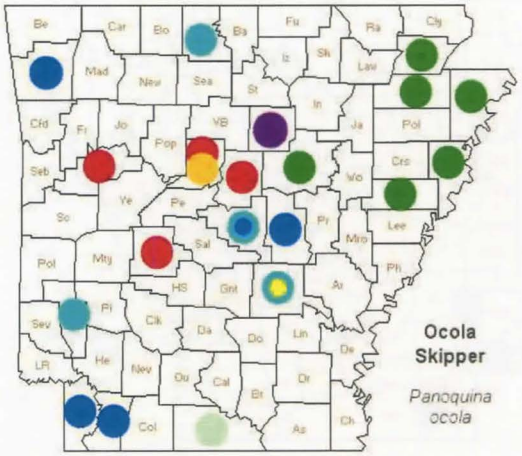

Fig. 31. P**164** [H83:4119]

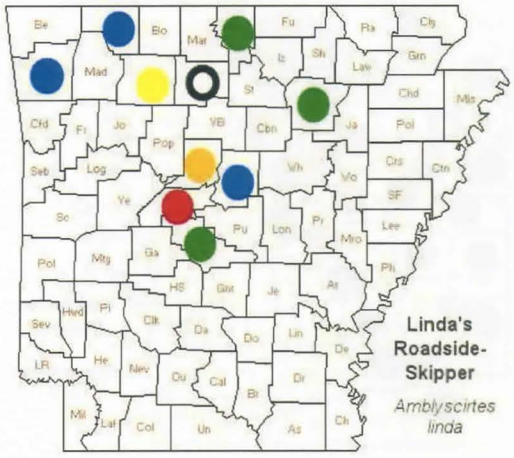

Fig. 32. P**175** [H83:4093]

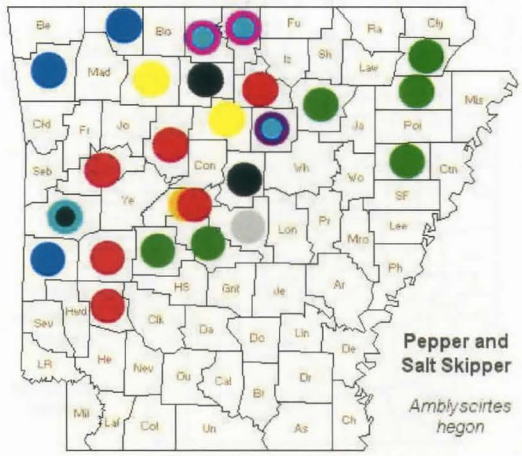

Fig. 33. P**178** [H83:4096]

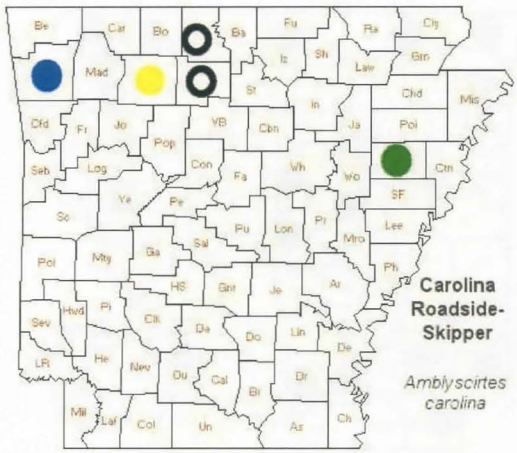

Fig. 34. P**180** [H83:4100]

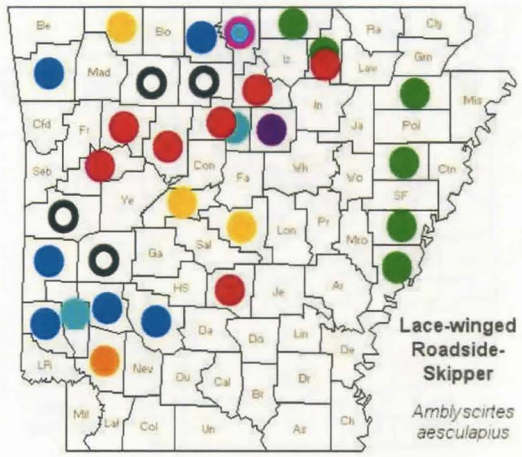

Fig. 35. P**182** [H83:4099]

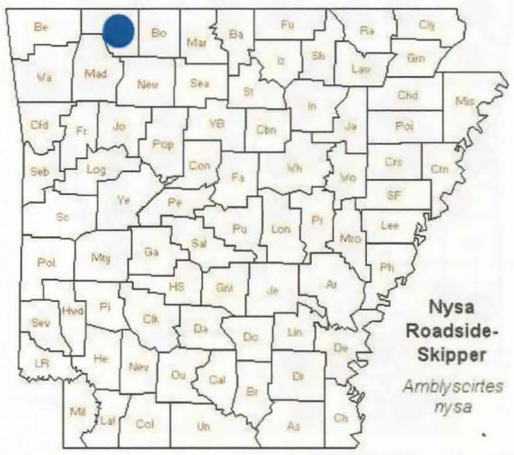

Fig. 36. P**184*** [H83:4103]

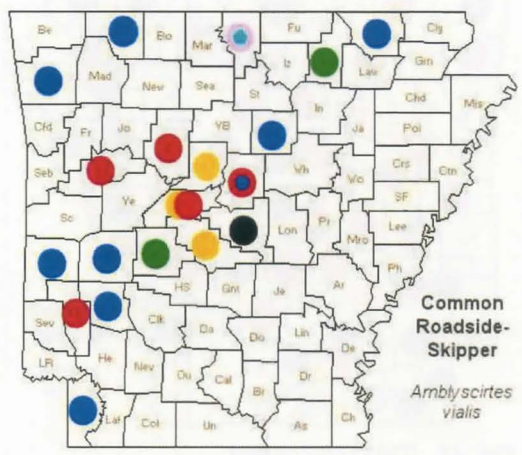

Fig. 37. P**186** [H83:4105]

Fig. 38. P**187** [H83:4108]

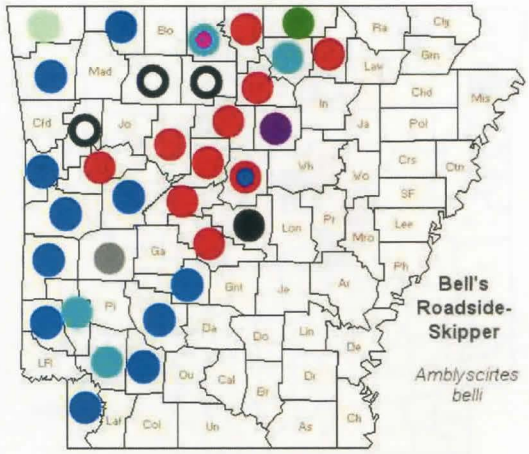

Fig. 39. P**189** [H83:4107]

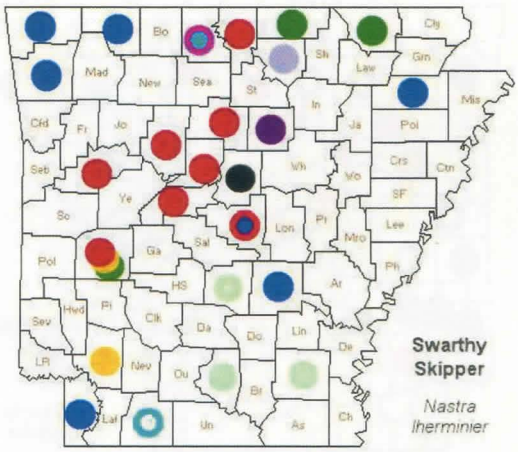

Fig. 40. P**195** [H83:3993]

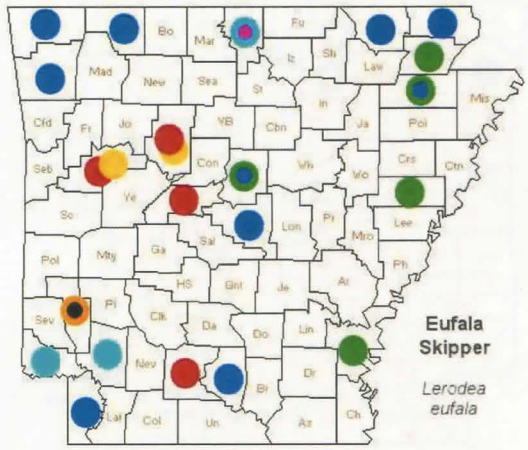

Fig. 41. P**200** [H83:4111]

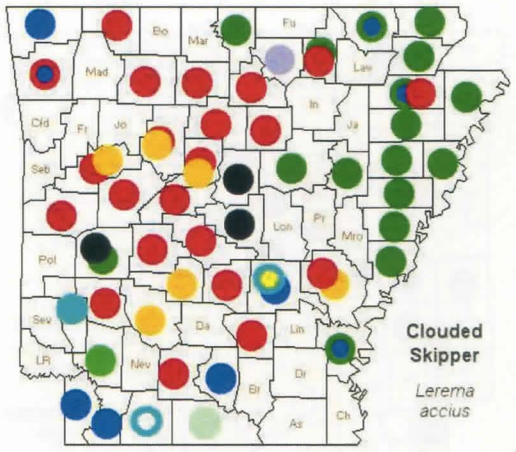

Fig. 42. P**202** [H83:3998]

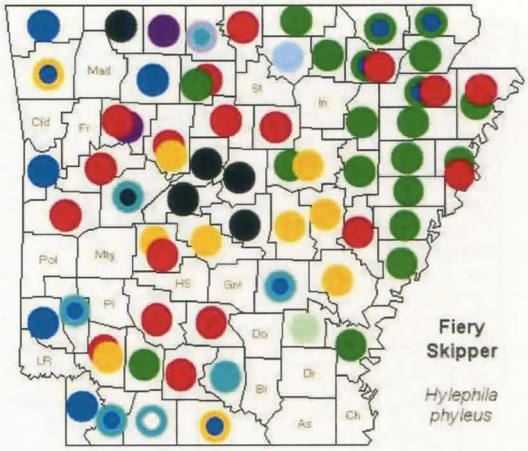

Fig. 43. P**209** [H83:4013]

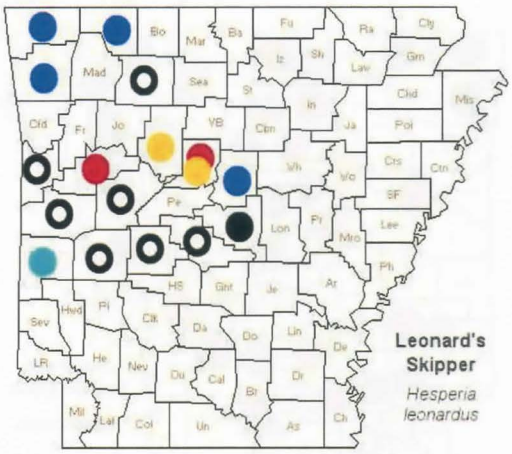

Fig. 44. P**218** [H83:4023]

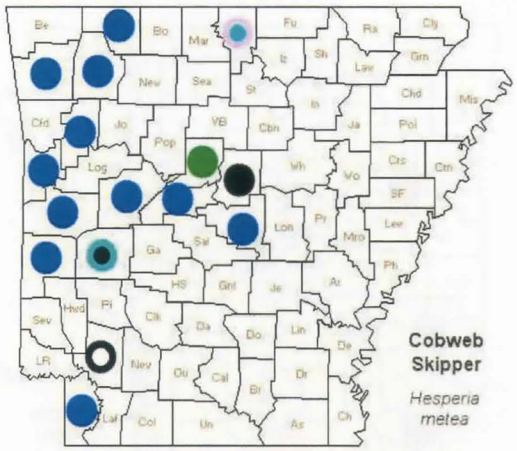

Fig. 45. P**221** [H83:4027]

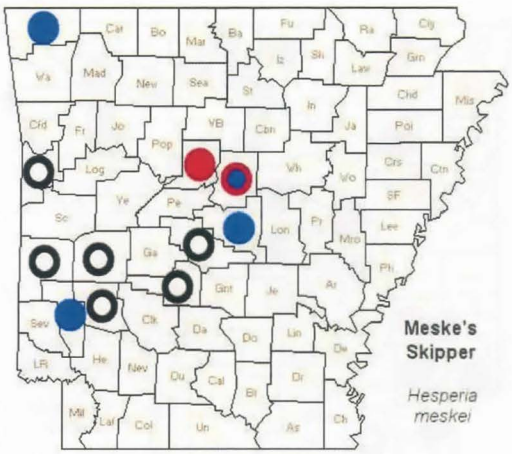

Fig. 46. P**224** [H83:4030]

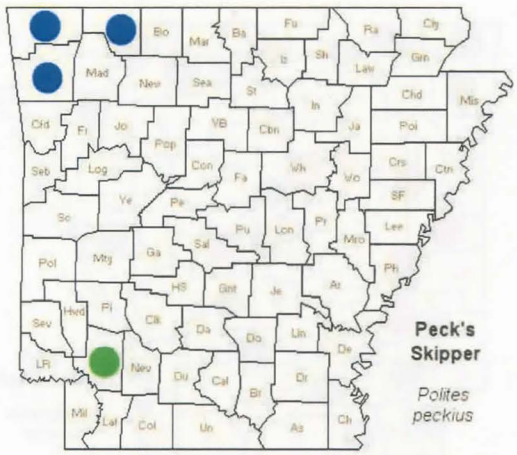

Fig. 47. P**232** [H83:4036]

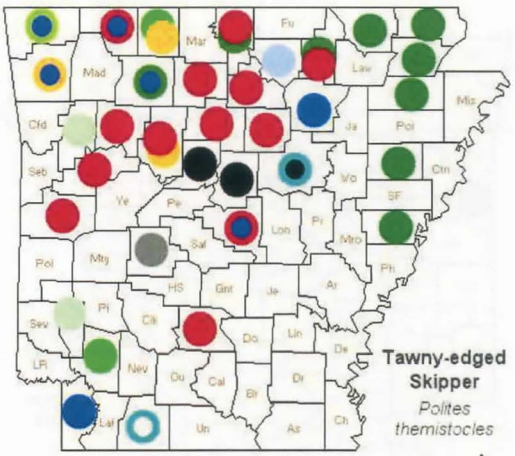

Fig. 48. P**236** [H83:4041]

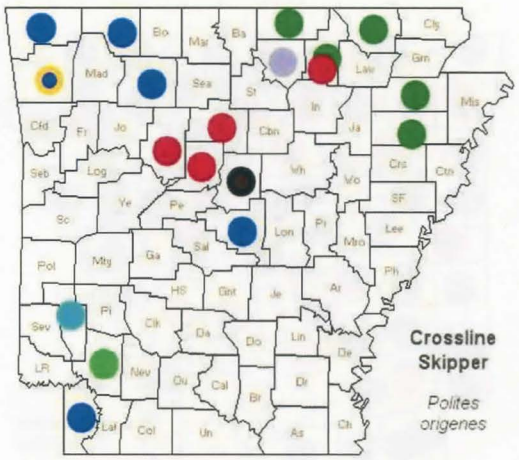

Fig. 49. P**238** [H83:4042]

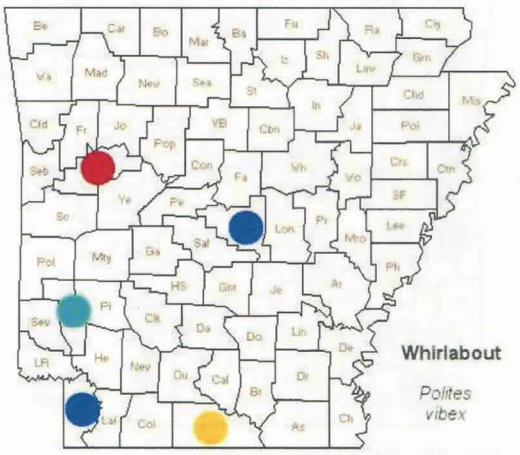

Fig. 50. P**241*** [H83:4045]

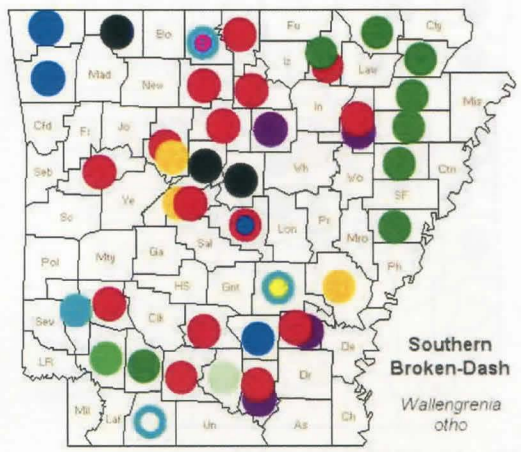

Fig. 51. P**242** [H83:4046]

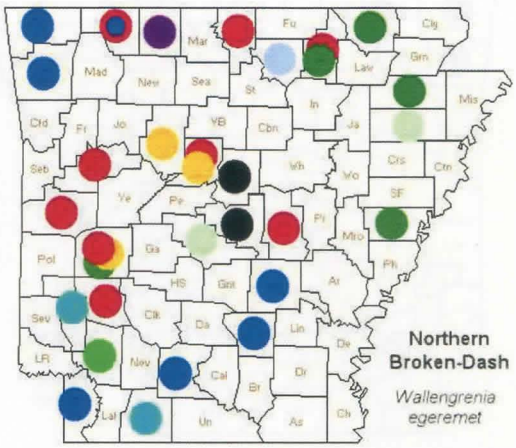

Fig. 52. P**243** [H83:4047]

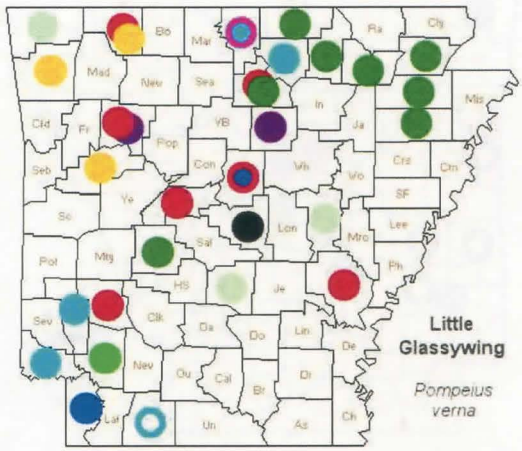

Fig. 53. P**244** [H83:4048]

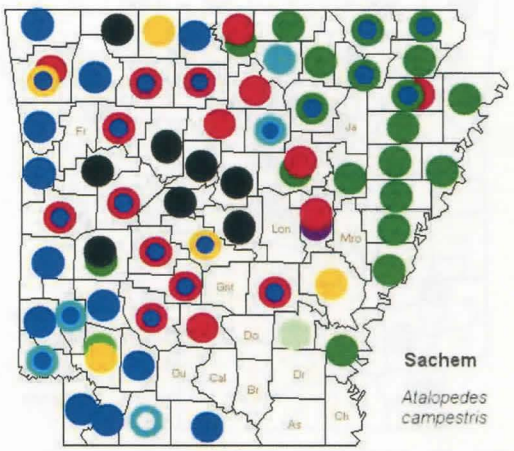

Fig. 54. P**245** [H83:4049]

Fig. 55. P**246** [H83:4050]

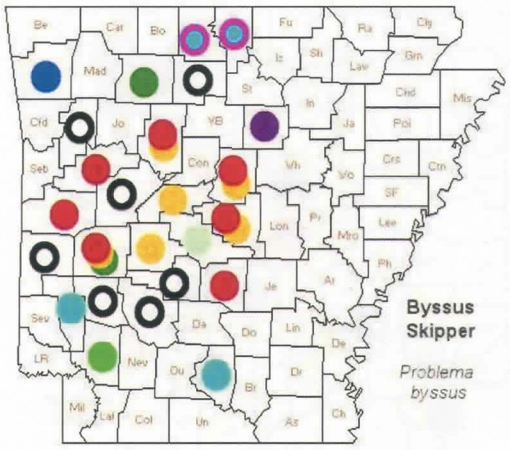

Fig. 56. P247 [H83:4052]

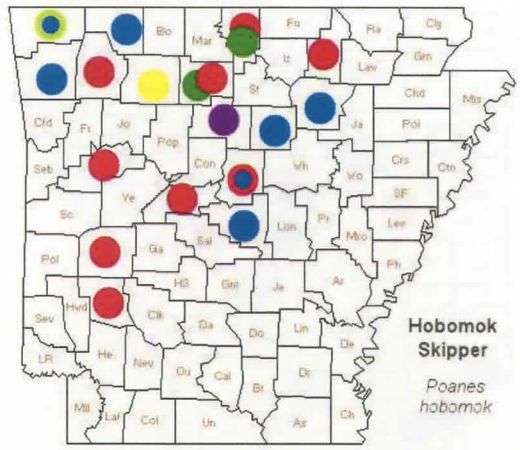

Fig. 57. P249 [H83:4059]

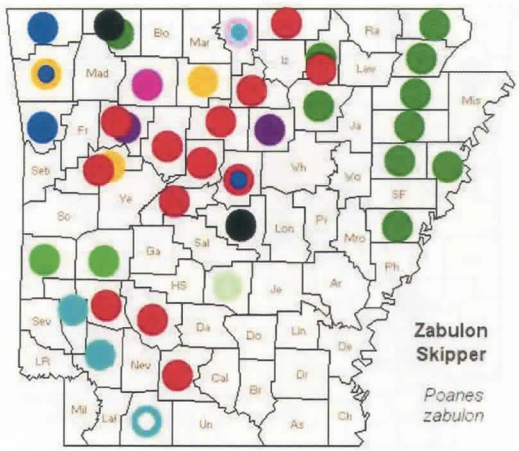

Fig. 58. P250 [H83:4060]

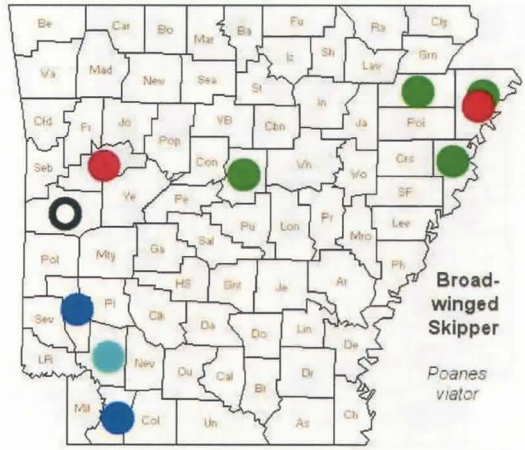

Fig. 59. P253 [H83:4064]

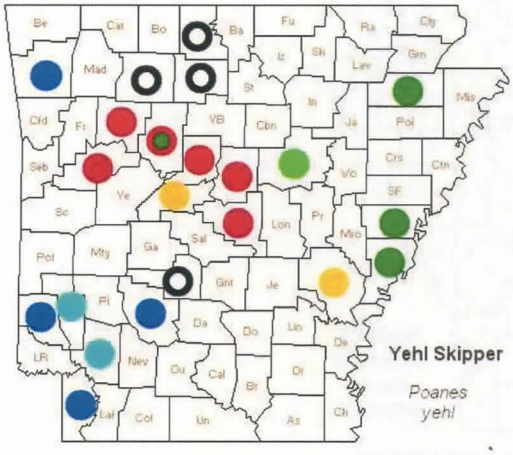

Fig. 60. P255 [H83:4063]

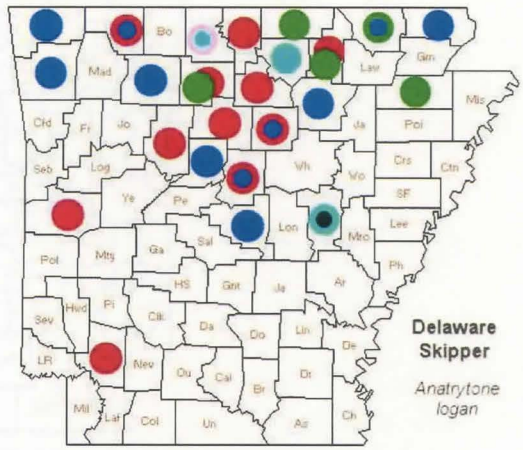

Fig. 61. P262 [H83:4051]

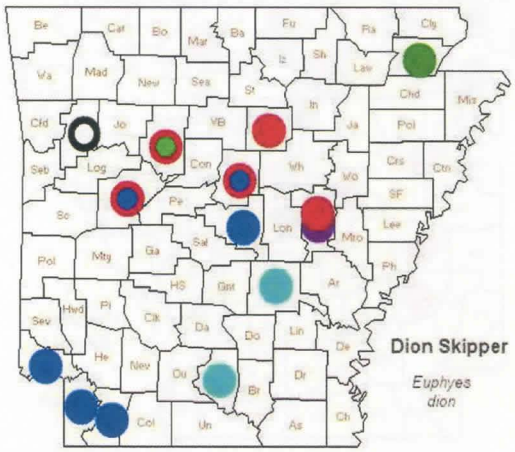

Fig. 62. P**269** [H83:4072]

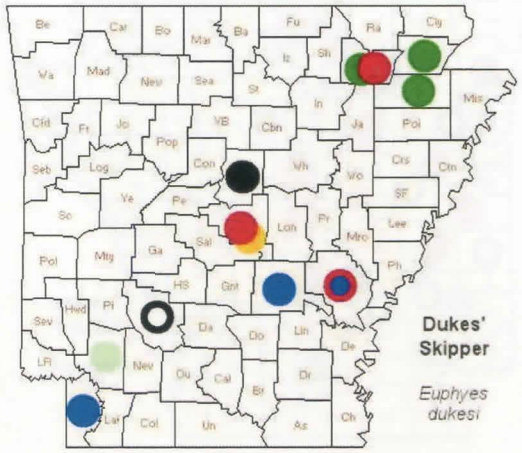

Fig. 63. P**271** [H83:4074]

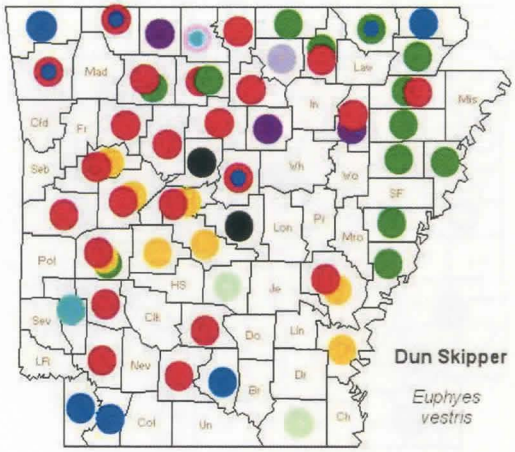

Fig. 64. P**274** [H83:4078]

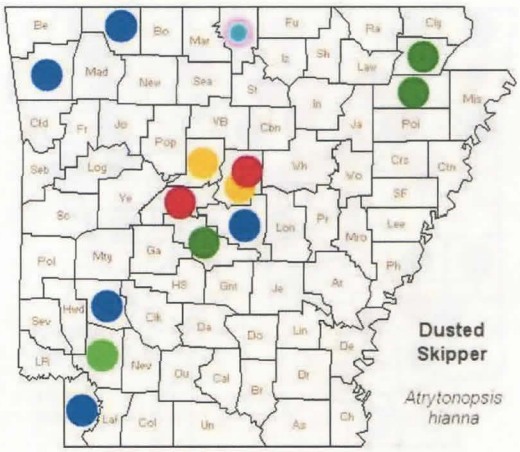

Fig. 65. P**276** [H83:4080]

Fig. 66. P**104*** [H83:3939] **ADDENDUM**

Figs. 2 - 66, Raney *et al.* (2019).

List of Collaborators & KEY to Colored dots

DARK BLUE dots: **USGS** surveys, pre-2004 ('baseline' records, incl. historical specimen collections).
DARK-BLUE-CENTERED dots: prior **USGS** records **confirmed** by more-recent sightings.
RED: Herschel **Raney** & Eric **Haley** & **Mt. Magazine** records.
ORANGE: Mel **White**.
DARK GREEN: Norman & Cheryl **Lavers**.
PINK: Lori A. **Spencer**.
YELLOW: Bob **Barber**.
GRAY: Tom **Lewis**.
BLACK: 3-sourced records (**USGS,** the **Lavers, Raney/Haley,** or Mel **White**).
BRIGHT GREEN: Heritage Commission lists (specimens or visual).
PEACH: Bill **Shepherd** &/or Lyndal **York**.
PURPLE: Bo **Verser**.
PALE BLUE: other (photographs).
PALE GREEN: Dan & Samantha **Scheiman**.
PURPLE with **TURQUOISE** centers: Rose **Maschek** (N. Arkansas).
TURQUOISE with **BLACK** centers: Kenny & LaDonna **Nichols** (post-2012).
TURQUOISE with **WHITE** centers: Devin **Moon** (Columbia Co. & SW Arkansas, 2016).
BLACK with **WHITE** centers: survey (**2010**) & action-plan papers from Baltosser, Rudolph, Ely, & Scheiman (**2015**).
TURQUOISE dots: **other** observers (visual records).

(Herschel D. Raney, Jr.; E-Mail: hrdragonfly1958@gmail.com)

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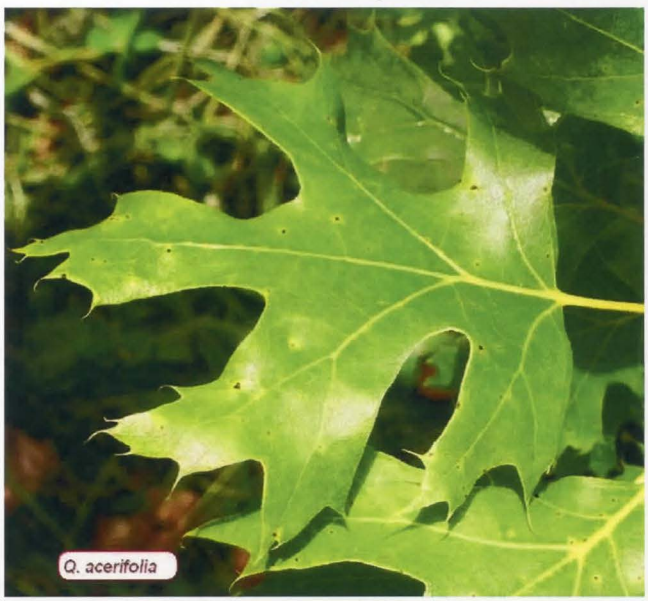
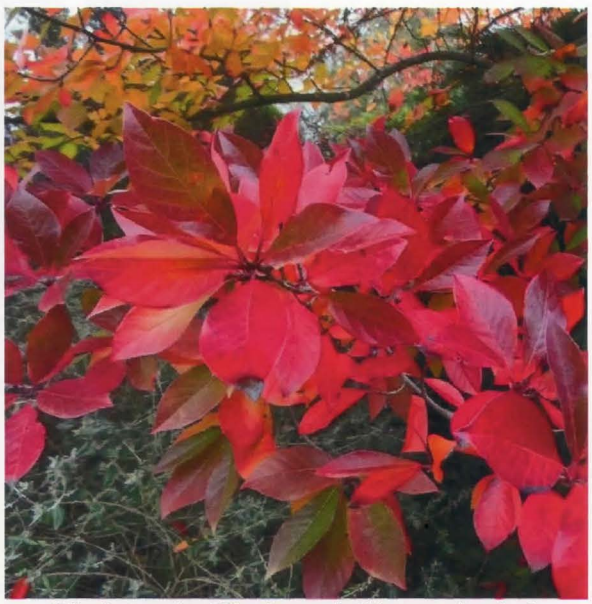


Maple-leaf oak (*Quercus acerifolia*), endemic to western Arkansas and known from only 4 upper-elevation sites [oaks.of.the.world.free.fr].



Black tupelo (Black gum) (*Nyssa sylvatica*) [www.greenthumbsgarden.com].

PHOTOS FROM BUTTERFLYFEST 2019 AT THE MCGUIRE CENTER FOR LEPIDOPTERA & BIODIVERSITY

Kevin Burnette and Laura Gaudette (incoming SLS secretary) at the SLS table, ButterflyFest 2019 (Photo by D. Matthews).

Charlie Covell with his display of blue butterflies at ButterflyFest 2019 (Photo by D. Matthews).

Tom Neal helps a guest holding a pine devil larva on display at ButterflyFest 2019. Special thanks to Jeff Slotten for providing this showpiece larva (Photo by D. Matthews).

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THE GENUS *LESMONE* HÜBNER, 1818 (LEPIDOPTERA: EREBIDAE) IN LOUISIANA

BY
VERNON ANTOINE BROU JR. AND CHARLOTTE DOZAR BROU

Fig. 1. Phenotype variations for ***Lesmone: hinna*** (a-d males, e-j females), ***detrahens*** (k-n males, o-p females), q. ***formularis*** male.

Hodges, et al. (1983) and Lafontaine and Schmidt (2010) both listed five species of the Erebidae genus ***Lesmone*** to occur in America, north of Mexico. Previously only one species, ***Lesmone detrahens*** (Walker) was listed to occur in Louisiana, date ranges (April 25 - October 12) by Chapin and Callahan (1967). Covell (1984) addressed only one species for eastern North America, stating ***detrahens*** occurs April - October, ranging from New York to Florida, west to east Kansas and Texas. Heppner (2003) listed the same three species addressed here, also for the state of Florida. No species of ***Lesmone*** was addressed by Rockburne and Lafontaine (1976), nor Heitzman and Heitzman (1987).

In our study over the past half century three species of ***Lesmone*** were captured in the state of Louisiana: ***Lesmone hinna*** (Geyer, 1837) (Fig. a-j), ***Lesmone detrahens*** (Walker, 1858) (Fig. k-p), and ***Lesmone formularis*** (Geyer, 1837) (Fig. 1q). In this study, multi-year composite phenograms (Figs. 2a, 2b) illustrate the numerous annual broods of ***detrahens*** and ***hinna***. Based upon small population samples of species of ***Lesmone*** from automatic capture UV light traps in the state (total adults n = 1,972), it appears there are seven annual broods of ***detrahens*** occurring at 31-day intervals, and nine annual broods of ***hinna*** occurring at 34-day intervals. Only a single adult of ***formularis*** was recorded.

Analysis of phenology for ***hinna*** indicates that this species acts like a migratory species entering Louisiana. These captured adults are occurring in all twelve months, some are most probably originating from more southerly tropical locals, but some moth migration can originate from other areas, north, east and west as well. Note there is a void of adults in late March to early May. This spring void encompasses a time interval where two broods could occur. I have documented and published concerning several other migratory moth species where a similar void of broods occurs during spring months. In this study ***detrahens*** was captured using uv light traps, fermenting fruit bait traps and as bycatch using semiochemical lures for the sesiidae species classified as 'grape root borer lures', 'dog-wood borer lures', and '(1:1) bibionipennis lures:grape root borer lures', and for both ***hinna*** and ***formularis*** captured using only a series of 7-8 automatic-capture high-wattage ultraviolet light traps. The confirmed parish records during this study are illustrated in Fig. 3.

Fig. 2a. Adult ***Lesmone detrahens*** captured in Louisiana. n = 1277

Fig. 2a. Adult ***Lesmone hinna*** captured in Louisiana. n = 694

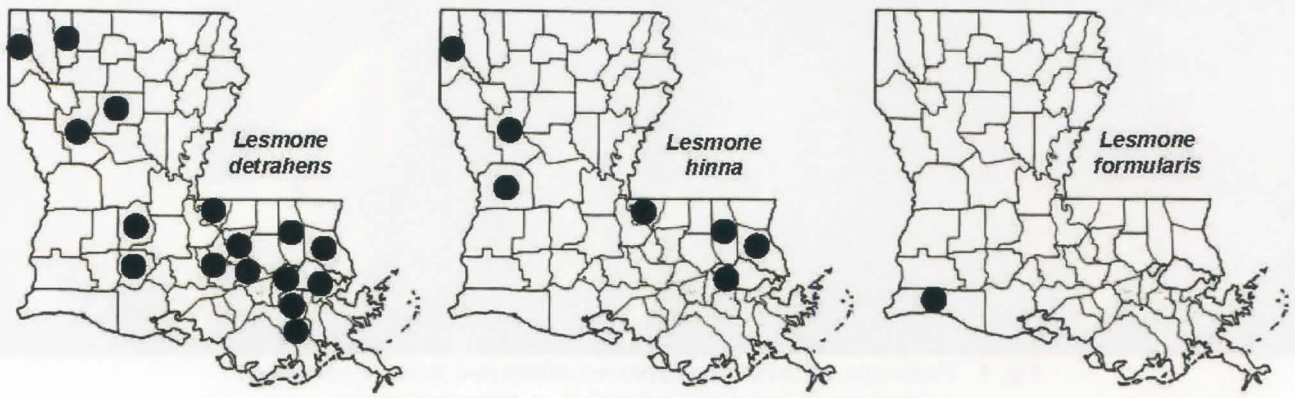

Fig. 3. Parish records for ***Lesmone*** species in Louisiana.

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Rockburne, E.W. and J.D. Lafontaine, 1976. *The cutworm moths of Ontario and Quebec.* Can. Dept. Agr. Pub. 1593.

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

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CORRECTION:

In my recent article on "Clarification of the Status of *Petrophila jaliscalis* and *Petrophila santafealis* in North America" (S. Lep. News 41(3):216-225, Sept. 2019), I made an error in the sequence of events in the "Taxonomic History" section which described the change in priority from subfamily Nymphulinae to Acentropinae (p. 217). The subfamily Acentropinae came into use primarily on the basis of Speidel's work in Europe (Spediel 1981, 1984). Not withstanding the proposal by Solis (1999) and attendant comments, a subsequent decision by the International Commission on Zoological Nomenclature upheld the priority of Acentropinae over Nymphulinae (ICZN 2003).

I thank M. Alma Solis for guiding me through the complexities of Pyraloidea taxonomy and this particular detail.

References:

International Commission on Zoological Nomenclature, 2003. Opinion 2021 (Case 3048), Nymphulinae Duponchel, 1845 (Insecta, Lepidoptera): not given precedence over Acentropinae Stephens, 1835. *Bull. Zool. Nomen.* 60(1):70-71.

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CHUCK SEXTON

(E-Mail: gcwarbler@austin.rr.com)

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Lubbock, Texas (October 2019)

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BIT MORE BIOGRAPHICAL INFORMATION ABOUT NOTED TEXAS LEPIDOPERISTS EDWARD C. KNUDSON (1947-2018) AND CHARLES BORDELON (1958-2016)

In the 2019 third quarter SLS newsletter I published some information concerning the recently deceased noted Texas lepidopterists Edward C. Knudson and Charles Bordelon. I have slowly been looking over some of the voluminous truckload amount of entomological materials I rescued from the trash heap before their home of several decades was gutted of personal belongings in preparation for refurbishing and sale by their heirs. Among the boxes of documents, I came across this one-page bit of biographical information that Ed apparently created and documented at some point in the past (date unknown). This brief synopsized biographical picture is quite informative, though it does not appear it was recently created. Regardless, I have submitted it here as an interesting interlude concerning these remarkable researchers.

Vernon A. Brou

ED KNUDSON
8517 BURKHART
HOUSTON, TX
77055

BIOGRAPHICAL NOTES

Early Life: Born in Chicago , June 22, 1948, I spent the next 7 years of my life in South Bend, IN, later moving briefly to Sturgeon Bay WI and Manistique, MI. I was interested in Entomology from the age of 5 and collected avidly during this time. In 1957, we moved to FL, settling in a new house in Largo, which was to be my home for the next 15 years. I briefly gave up collecting during my High School Days, as it was definitely NOT cool.

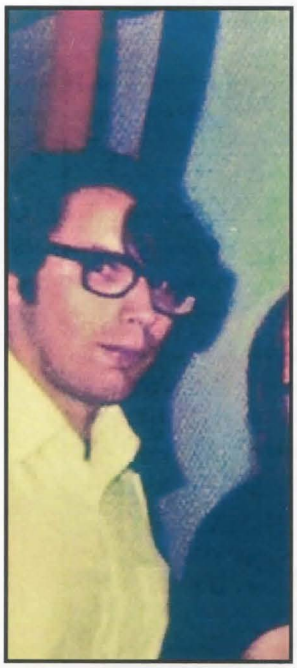
Education: University of FL, Gainesville from 1967-73, emerging with a BS in Zoology and an MD degree. While in Gainesville, I met Tom Neal, who rekindled my interest in Lepidoptera. Toward the end of my time in FL, I joined the Lepidopterists' Society, and later became a Charter member of the Southern Lepidopterists' Society. I left FL for TX in 1973, continuing my Medical education at Baylor College of Medicine in Houston, which was completed in 1977. My Entomological education came later.

Texas: In 1974, I met Mike Rickard, who soon introduced me to an active group of local and not so local Lerpidopterists, including Bill McGuire, John Vernon, Frank Hedges, JF (Terry) Doyle, H. A. Freeman, James Gillaspy and Roy Kendall. We crisscrossed the state in those years, looking mainly for butterflies. A big turning point came in 1977, when I came under the influence of Andre Blanchard. This began my "second" education in Entomology, specifically the Moths of Texas.
By 1979, Blanchard was no longer able to travel extensively, so I became his field assistant and regular visitor to his home in Houston. Soon we began collaborating on scientific papers, and together, we published about 30 papers, including the descriptions of over 40 new species of Texas moths. From Andre, I learned techniques of dissection and photography, as well as scientific writing and through him, became acquainted with many of the leading museum specialists, including Franclemont, Clarke, Hodges, Ferguson, Rindge, Poole, Lafontaine, and Munroe.

In 1991, I began a close association with Charles Bordelon, whom I had met some 7 years earlier. We began a collaboration in further research on Texas Lepidoptera and continue this to this day. Our first major project was a comprehensive Lepidoptera Survey of the Big Thicket National Preserve, which has culminated in a checklist (still growing) including over 1700 species from a 7 county region in SE TX. We have discovered additional new species, which we are now beginning to describe. The ultimate goal of our research is the publication of an illustrated atlas of the Lepidoptera of TX. in 12 volumes. This has been made a feasible undertaking thanks largely to the new digital imaging and computer technology that is now available.

TEXAS LEPIDOPTERA SURVEY

ED KNUDSON (1947 - 2018)



Ed Knudson in his younger years (Photo sent in by Tom Neal).

As a medical student Ed, having what I would describe as a "photographic memory", spent remarkably little time studying. He was frequently available for moth collecting visits to local warehouses or playing Chopin in one of the practice rooms at the music building on campus. As a part of my graduate assistant duties, every two weeks I took a state vehicle south for a velvet bean caterpillar, *Anticarsia gemmatilis*, migration survey. Depending on what medical school rotation he was on, Ed would ride along and we would collect around south Florida. On the first such trip, in 1972, we collected our only Schaus Swallowtails, marveled at the dozens of purple wings at bait, chased *Composia fidellissima*, and practically ignored those "boring" Miami blues and *Epargyreus zestos*. Who would have predicted the calamitous drop off of species that would spread through the state in ensuing years.

Usually we would stop at Old South Barbecue Ranch in Clewiston, the "sweetest little town in the USA" for dinner. This is where we bought our sugar cane cutter machetes, which with their abbreviated-length blades, were handy for use in dense brush. Ed, in a famous incident, later took advantage of the cane-cutter's close in maneuverability to fend off a carjacker during a trip to Galveston.

At least back in those days Ed was a notoriously hapless driver and his red Ford Fairlane coupe paid the price. No doubt a major reason for this was his propensity to observe wildlife instead of paying attention to the road. Of course, this doesn't seem a reasonable explanation in urban areas. I was along on our first foray into Mexico, when no sooner did we cross the border into Matamoros, Ed became totally freaked out by the Mexican style of driving and was forced to the side of the street amid a cacophony of blaring horns. I had to take over and we made our escape just as a horde of street vendors was descending upon us. Some time later, on another Mexico trip, Ed wrecked his car and, If I remember correctly, had to hitch hike out, leaving his car permanently behind. Ironically, later, when he was well-to-do he bought a Ferrari. It was probably a blessing for the public at large that the car spent most of it's life in the garage.

In Gainesville we frequented the Doyle Connor Building where the Florida State Collection of Arthropods was housed. We got to know the resident entomologists there and, even though there was no Lepidoptera specialist on staff at the time, we were regaled with interesting stories as well as collecting site tips. Dr. Howard Weems was especially helpful and included us in the Research Associate program he had organized. This gave us access to the collection, equipment, collecting permits, and lodging at agricultural experiment stations around the state. Ed's interest really took off during this time. It is through Howard Weems that we met Jim Alden, a cabinetmaker who, at the time, had manufactured nearly all the Cornell drawers used for the state collection. His home and shop were located in a diverse natural area transitional between mature hardwood forest and seasonally wet prairie. Jim was all too happy to provide a spot and power for an agricultural black light as well as a primitive crawl - in 6' X 6' screened cage. Of course we purchased all of our drawers from Jim and even after Ed moved to Houston, Jim delivered cabinets to him while on trips to visit relatives in Texas. The light trap provided many species we had never seen before and I maintained it for many years after Ed moved away.

Tom Neal

INVASIVES: JUST BECAUSE IT'S GREEN, DOESN'T MEAN IT'S GOOD

BY

CANDY SARIKONDA

I've been doing pollinator habitat restoration for a long time. And I've learned a few things over the years. Most notably, I've learned that not all habitats are created equal.

And not everybody knows it.

So, one of the best things we can do as pollinator advocates is to educate others about the importance of habitat restoration and creation, and help people to understand that just because it's green, doesn't mean it's good.

Recently, I noticed a Facebook post in which citizens in my city were concerned about the removal of trees at the intersection of two main roads in our city. The Ohio Department of Transportation (ODOT) has planned a major project for that site, which involves completely redesigning the interchange. In preparation, ODOT crews were removing much of the understory brush at the site, and citizens were concerned that these trees and bushes would be a great loss for wildlife.

I decided to share my thoughts about the trees and understory shrubs at that location. Specifically, the large number of invasive trees and bushes present there, that harm our city's ecosystem.

I was happy to see them go.

A healthy urban forest depends on forest management. Much of what was located at the city site was highly invasive. Invasive trees and bushes like common buckthorn, Tree of Heaven, bush honeysuckle, and callery (Bradford) pear choke out our native trees and wildflowers. These invasives destroy biodiversity. As we lose our native trees and wildflowers, we also lose our native insects that feed on them, and thus our native birds who feed on those insects.

For example, a native Oak tree can support 534 different species of butterfly and moth caterpillars. By contrast, the invasive Common Buckthorn has been documented to support only 4 species. On top of it, common buckthorn is a host for the soybean aphid, a recently introduced crop pest. Not a pest we want in northwest Ohio, where our main crops are corn and soybeans.

Why do invasive trees and shrubs fail to support our native Lepidoptera? Because our native insects don't recognize these non-native trees as food. They can't overcome the chemical defenses of these plants, and thus can't and won't eat them. They'll starve rather than eat these non-native plants.

Our native Lepidoptera have co-evolved with their host plants. Caterpillars have evolved to be able to digest, detoxify and even sequester the chemicals in their host plants. As Lepidopterists, we know that 90% of our insect herbivores are specialists, which eat only particular native plants or groups of plants. We know that caterpillars can't simply adapt overnight and start eating non-native plants. But we need to communicate that to the general public.

An example I like to use is the monarch butterfly. Monarch caterpillars have evolved to be able to consume milkweed, and sequester the cardiac glycoside toxin in their bodies, even using it as a defense against predators. Luna moth caterpillars in my area prefer the leaves of hickory and sweet gum. Polyphemus caterpillars love oak leaves. Not one of these caterpillars would ever eat buckthorn. They would starve to death first.

Monarch caterpillar feeding on common milkweed (photo by Candy)

And without caterpillars, our birds will starve too.

Warblers are insectivores, and they are masters at quickly finding and consuming flies, caterpillars, bees

and other insects. Visit Magee Marsh in northwest Ohio on a spring migration day and you will witness numerous warblers plucking insects from the trees at speeds that seem near impossible to fathom. In the time it takes you to find one insect, the warblers will likely have found and consumed several. In 1907, Mosher recorded a chestnut-sided warbler eating 22 caterpillars in 14 minutes and a Nashville warbler ate 42 caterpillars in 30 minutes. A black-and-white warbler ate at least 28 caterpillars in 10 minutes "and probably took many more."

It is estimated that 96 percent of our terrestrial birds rear their young on insects. Caterpillars are a major protein source for those baby birds, and they need a lot of them. A 1996 study by O'Neill-Goodbred and Holmes showed that pairs of nesting black-throated blue warblers made 22 trips to the nest each hour! Douglas Tallamy describes the nesting habit of Carolina chickadees, "While they are feeding their young, watch what the chickadees bring to the nest: mostly caterpillars. Both parents take turns feeding the chicks, enabling them to bring a caterpillar to the nest once every three minutes. And they do this from 6 a.m. until 8 p.m. for each of the 16 to 18 days it takes the chicks to fledge. That's a total of 350 to 570 caterpillars every day, depending on how many chicks they have. So, an incredible 6,000 to 9,000 caterpillars are required to make one clutch of chickadees."

Tallamy reports a pair of bluebirds, when feeding their young, bring back to the nest up to 300 caterpillars per day.

Yet Tallamy and Shropshire found that when areas are overrun with invasive plants, they produce 22 times fewer caterpillars than more natural areas. Narango, Tallamy and Marra found that baby Carolina chickadees reared in landscapes with less than 70% native plants were food-limited and had low survival rates. But landscapes with 94% native plants produced a stable chickadee population, in other words enough offspring were produced to replace the parent's generation.

My city has many efforts planned to restore habitat in our city parks, and protect our river ecosystem. We understand the need for erosion prevention, flood control and habitat creation. We know that managing the forest will even help with tick control.

All of that begins with removing invasives, and allowing our deeply-rooted native wildflowers and trees to regrow.

So for me, seeing those invasive bushes and trees removed from the interchange in my city is a blessing. Because that site will no longer serve as a source of invasive seed, and undermine the city's ecosystem restoration efforts.

There is no end game in conservation. There is always work to be done, and ecosystems need our constant care and management. All things green are not created equal. So learn about invasives in your area, and help with their removal. Trust me, it's very therapeutic. And the butterflies and birds will love you for it!

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

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Candy Sarikonda makes the following comment as a continuation of her article on the previous page: "Before and After photos from a recent habitat restoration workday in my city park. We removed bush honeysuckle from the site, to allow spring woodland ephemerals to reestablish" (photos by Candy).

Before

After

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JIM TAYLOR

It is with great sorrow to learn that Jim Taylor from Savannah, Georgia, died in June 2019.

Sincerest condolences to his wife and family.

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PHOTOS OF TWO BUTTERFLIES LISTED IN THE STATE REPORT OF GEORGIA

BY

JAMES K. ADAMS

***Problema byssus*, May 19 and 22, Shelman Bluff Road, at junction with Pine Harbor road, 100 yards from U.S. 17, McIntosh Co., GA, Record of Nancy Crosby:**

***Hemiargus ceraunus* (COUNTY), Alligator Creek WMA, Wheeler Co., late September, . Record of Giff Beaton**

BUTTERFLIES OF CUMBERLAND ISLAND, CAMDEN COUNTY, GEORGIA

BY

MARC C. MINNO AND MARIA F. MINNO

Cumberland Island is the southern-most and largest barrier island along Georgia's Atlantic coast. It is a famous place for wild horses, gorgeous white sand beaches, and colorful history. It is home to the First African Baptist Church, dating back to 1893. Part of the Carnegie family built several mansions on Cumberland Island in the late 1800s. The elegantly beautiful Plum Orchard house and the eerie Dungeness Ruins (Fig. 1) have been designated as National Historic Districts. Cumberland Island National Seashore was established in 1972, of which more than 9,000 acres were declared the Cumberland Island Wilderness in 1982. The only access to the island is by boat and the National Park Service limits visitors to a maximum of 300 people per day.

The island is about 18 miles long and 3 miles across at the widest part at the north end, and only about 0.6 mile wide at the narrowest point just south of the Greyfield Inn. Amelia Island, Florida, lies a bit over half a mile to the south across the St. Marys River inlet. The Atlantic side of the island is a high energy zone, with wide sandy beaches and dunes. The quieter western side has mudflats and saltmarshes.

The northern end, known as Little Cumberland Island, is separated from the rest of Cumberland Island by Christmas Creek and salt marshes and is a privately-owned area, not part of the National Seashore. Cumberland Island has some private residences, a few unpaved roads, and miles of hiking trails. The Main Road is the only drivable route from south to north. At the northern end, North Cut Road runs from the western side of the island to the Atlantic Ocean on the eastern shore.

More than 500 species of vascular plants have been reported from Cumberland Island (Zomlefer *et al.* 2008), of which at least 66 kinds are not native to the southeastern United States (Hunt and Langeland 2005). About 20,000 acres of Cumberland Island are uplands, consisting mostly of forests of oaks and/or pines, except for the dunes and ruderal areas such as the Stafford Old Field. Live oak (*Quercus virginiana*) forest with saw palmetto (*Serenoa repens*) understory (Fig. 1) is a very common forest type. The native bamboo, switchcane (*Arundinaria gigantea*), has several kinds of butterflies and moths associated with it. Both tall and short forms (formerly called *A. tecta*) of switchcane occur in patches on Cumberland Island. There are some areas of longleaf pine (*Pinus palustris*)/turkey oak (*Quercus laevis*) sandhill, oak scrub with *Quercus myrtifolia*, and pond pine (*Pinus serotina*) flatwoods at the northern end of the island. By its nature, the vegetation of Cumberland Island is subject to periodic wildfires and has been managed with prescribed fires by National Park Service staff.

Nearly 17,000 acres of Cumberland Island are wetlands, mostly in tidal salt or brackish waters. Salt marshes with saltmarsh cordgrass (*Spartina alterniflora*) (Fig. 1) and salt flats with perennial glasswort (*Salicornia ambigua*) and saltwort (*Batis maritima*) are found along tidal creeks and other low-lying areas. There are also swamps, interdune swales (Fig. 1), and small areas of marsh, wet prairie, and other types of freshwater wetlands. Lake Whitney in northeastern Cumberland Island is the largest freshwater pool, but a dozen or more other smaller ponds occur in the central and northern parts of the island, mostly in the Wilderness Area.

On April 8, 2010 Sarah L. Corbett (now Sarah Corbett Heath), a botanist with the Southeast Coast Inventory and Monitoring Network at the time, emailed Marc Minno about conducting a lepidopteran survey at Cumberland Island National Seashore. We could not find any published information on the butterflies or moths of Cumberland Island, but decided to focus on the butterflies due to limited time. Some southeastern butterflies have undergone tremendous changes in distribution in recent times probably in response to climate change. Since barrier islands are at the forefront of climate change effects, we felt that this study would provide an important baseline for future comparisons of the butterfly fauna. We applied for and received a Scientific Research and Collecting Permit (Study # CUIS-00035, Permit # CUIS-2010-SCI-0007) to document the islands' butterflies issued by the U.S. Department of the Interior, National Park Service, Cumberland Island National Seashore. Here we present results of our searches for butterflies on Cumberland Island in 2010, 2011, and 2012.

METHODS

We first visited Cumberland Island on June 26-27, 2010 to search for butterflies, and ended on September 19-21, 2012. Over this 28-month period we made 11 trips to the island on 26 days with at least 140 site visits and more than 105 hours of observation in the field. At each site we searched for adults and immatures, and took

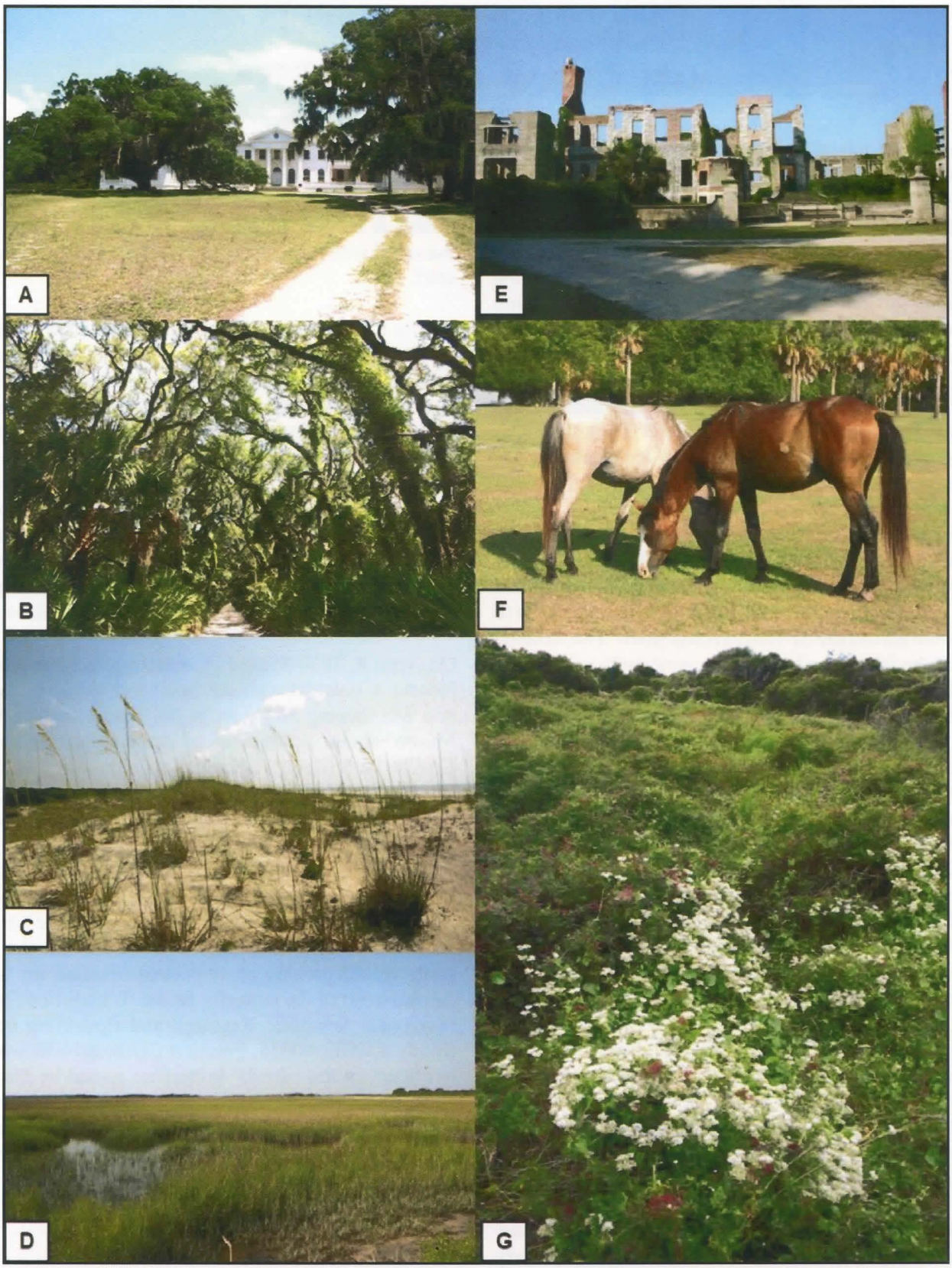

Figure 1. Scenes of Cumberland Island, Georgia. A: Plum Orchard, B: Main Road through live oak forest, C: Dunes at Stafford Beach, D: Salt marsh at the Cumberland Wharf Ruins, E. Dungeness Ruins, F: Wild horses near Dungeness, and G: *Mikania scandens* in flower in an interdune swale at Northeast Beach.

digital images to document the fauna and flora. We did not collect any butterfly specimens.

At each site, we recorded the time spent searching, weather, the species of butterflies and numbers seen, host plants, predators, and other information. We also noted butterflies seen as we drove slowly on the roads and trails. We explored various habitats and areas of Cumberland Island from the Dungeness Ruins area in the south to the Cumberland Wharf Ruins, First African Baptist Church, and Christmas Creek in the north. We did not visit Little Cumberland Island.

Cumberland Island National Seashore generously provided housing and a 4-wheel drive truck to explore the island. Doug Hoffman, biologist with the Resource Management Division, made our arrangements and looked after us, usually loaning us a radio for communications with headquarters in St. Marys, Georgia in case of trouble, since much of the island is wilderness. The main hazard of doing field work on Cumberland is the large numbers of ticks, which may carry Lyme disease, Ehrlichiosis, or other infectious agents. Although rattlesnakes are rare on Cumberland Island, cottonmouths are relatively common around swamps and freshwater wetlands. Other things to watch out for are poison ivy, chigger mites, and swarms of biting flies including mosquitoes, ceratopogonids, and tabanids.

RESULTS

We tallied 699 adult butterflies of 34 species in 2010; 481 adults of 37 species in 2011; and more than 2,985 adult butterflies of 65 species in 2012 (Appendix 1). Overall, we found at least 68 species of butterflies on Cumberland Island. In addition, Sarah L. Corbett Heath sent us photos of two others bringing the total to 70 butterfly species for Cumberland Island. We did not find any of the switchcane feeding butterflies such as *Amblyscirtes aesculapius* or *Enodia portlandia*, but at least one should occur there.

The most abundant butterflies we found were the barred yellow (*Eurema daira*) with 1,583 adults, gulf fritillary (*Agraulis vanillae*) with 443 adults, saltmarsh skipper (*Panoquina panoquin*) with 284 adults, cloudless Sulphur (*Phoebis sennae*) with 266 adults, Phaon crescent (*Phyciodes phaon*) with 185 adults, Palamedes swallowtail (*Pterourus palamedes*) with 115 adults and the zebra swallowtail (*Protographium marcellus*) with 112 adults tallied.

Other commonly seen butterflies include the hesperiids *Urbanus proteus, Erynnis horatius, Hylephila phyleus*, and *Polites vibex*, the pierids *Abaeis nicippe* and *Ascia monuste*, the lycaenids *Calycopis cecrops* and *Hemiargus ceraunus*, and the nymphalids *Junonia coenia, Hermeuptychia sosybius*, and *Megisto cymela.*

DISCUSSION

Harris (1972) reported *Anthocharis midea annickae*, *Oligoria maculata*, and *Problema byssus* from Jekyll Island and *Poanes viator* from St. Simons Island, Glynn County, Georgia. These are the next barrier islands north of Cumberland Island. Dr. Lance Durden (pers. comm.) has found 81 species of butterflies on Sapelo Island, McIntosh County, Georgia, including *Cecropterus bathyllus, Cecropterus confusis, Erynnis baptisiae, Anatrytone logan, Nastra lherminier, Poanes zabulon, Polites origenes, Pieris rapae, Satyrium calanus, Satyrium liarops, Libytheana carinenta, Cyllopsis gemma,* and *Enodia portlandia*. We did not find any of these butterflies on Cumberland Island, but some may be found there with additional searching.

Sweetleaf (*Symplocos tinctoria*), the host plant of *Satyrium kingi* is a common understory shrub on Cumberland Island. We also found a patch of woolly croton (*Croton capitatus*), a host for the goatweed leafwing (*Anaea andria*), at The Nature Conservancy (TNC) old field located just northeast of the Stafford House. Perhaps these butterflies will eventually be found on Cumberland Island.

Barrier islands are in harm's way since sea level is predicted to rise and the frequency of storms is expected to increase due to climate change. The abundance and diversity of butterflies on Cumberland Island are likely to change in unpredictable ways. Some species may disappear, such as the eastern pygmy-blue which inhabits salt flats, and new ones may become established. Even currently common species may diminish due to changing environmental conditions. Butterflies are sensitive to environmental changes, and are relatively easy to identify in the field, making them an ideal invertebrate group to monitor. We recommend periodic monitoring of the butterflies at Cumberland Island to document the changes at least every five years.

ACKNOWLEDGEMENTS

We thank the Cumberland Island National Seashore staff for their knowledge, expertise, and help with this project, especially: Sarah L. Corbett Heath and Briana Smrekar with the Southeast Coast Inventory and Monitoring Network for information about Cumberland Island and photos of butterflies they found, Bill Commins for assistance with permitting, Shad Dusseau, Park Ranger, for rescuing us one evening in the wilderness when our truck quit working, Doug Hoffman for a wealth of information about Cumberland Island as well as arranging our vehicles, travel, and

accommodations, Wayne Lagasse and Kelly with maintenance staff for rides to and from St. Marys, John A. Mitchell, Museum Curator and Sarah Cole, Tour Leader, for information about Cumberland Island's natural history. Barbara Dusseau, Naturalist for the Greyfield Inn, graciously provided information about plants and animals. Resident Carol Ruckdeschel, who maintains the private Cumberland Island Museum, shared some of her extensive knowledge of the biota of the island. Dr. Lance A. Durden, Professor of Biology at Georgia Southern University kindly sent us his information about butterflies of Sapelo Island for comparison.

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Appendix 1. Butterflies observed on Cumberland Island, Camden County, Georgia from June 2010 through September 2012. Nomenclature generally follows Pelham (2008) with some updates as noted and personal preference deviations.

FAMILY HESPERIIDAE (Skippers)
SUBFAMILY EUDAMINAE (Broad-winged Skippers)
Cecropterus dorantes dorantes (Stoll, 1790)
(Dorantes Skipper)
formerly known as *Urbanus dorantes dorantes* (see Li et al. 2019)

We found one adult of the Dorantes Skipper on Raccoon Key, southwestern Cumberland Island, on May 10, 2012. This individual was visiting the flowers of *Borrichia frutescens* at the edge of a salt marsh.

Cecropterus pylades (Scudder, 1870)
(Northern Cloudywing)
formerly known as *Thorybes pylades* (se Li et al. 2019)

We found one adult of the Northern Cloudywing on April 4, 2012 flying low to the ground in pond pine flatwoods habitat on the eastern portion of North Cut Road, northern Cumberland Island. This individual appeared to be a female because it was investigating patches of Elliott's milkpea (Galactia elliottii), a potential larval host.

Epargyreus clarus clarus (Cramer, 1775)
(Silver-spotted Skipper)

We found one adult of the Silver-spotted Skipper on June 27, 2010 in the oak forest at Stafford Beach on the east coast of central Cumberland Island.

Urbanus proteus proteus (Linnaeus, 1758)
(Long-tailed Skipper)

ABUNDANCE: 70 adults were tallied: 9 in 2012, 19 in 2011, and 42 In 2012.
SITES: Raccoon Key, Dungeness Ruins area, Stafford Old Field, Plum Orchard, Cumberland Wharf Ruins, First African Baptist Church, North Cut Road, and other places.
FLOWERS VISITED: *Centrosema virginiana, Cirsium nuttallii, Crotalaria pallida, Diodia teres, Elaphantopus elatus, Galactia volubilis, Ipomoea cordatotriloba, Lantana strigocamara, Lespedeza hirta, Phyla nodiflora, Pluchea odorata*, and *Salvia coccinea.*
HOST PLANTS: We found larvae on *Desmodium incanum* and *Desmodium paniculatum* (Fabaceae) on September 26, 2010 and October 1, 2011 and on *Phaseolus polystachios* (Fabaceae) . on September 19, 2012.
DATES: Mar 8-9-10 (2012), Sep 1-2-3, 19-20-21 (2012), Sep 26-27 (2010), Sep 30 (2011), Oct 1-2 (2011).

NOTE: Also reported from Sapelo Island (Minno 2012).

SUBFAMILY PYRGINAE (Spread-winged Skippers)

Erynnis brizo brizo (Boisduval & Le Conte, [1837]) (Sleepy Duskywing)

We only found one adult (Fig. 2F) at the northern end of Cumberland Island in the scrub oak habitat along the middle portion of North Cut Road on March 10, 2012.

Erynnis horatius (Scudder & Burgess, 1870) (Horace's Duskywing)

ABUNDANCE: 71 adults were tallied: 2 in 2010, 7 in 2011, and 62 in 2012.
SITES: Raccoon Key, Dungeness Ruins area, Dungeness Beach, Stafford Old Field, Plum Orchard, Cumberland Wharf Ruins, First African Baptist Church, along North Cut Road, Christmas Creek, and other places.
FLOWERS VISITED: *Borrichia frutescens, Cirsium nuttallii, Diodia teres, Galactia elliottii, Galactia volubilis, Lantana strigocamara, Lespedeza hirta, Phyla nodiflora, Serenoa repens*, and *Trichostema dichotomum.*
DATES: Mar 6 (2011), Mar 8-9-10 (2012), Apr 3 (2012), May 9-10 (2012), Jun 26 (2010), Aug 20 (2011), Sep 1-2-3, 19-20 (2012), Sep 26 (2010), Sep 30 (2011).
NOTE: Also reported from St. Simons Island (Harris 1972).

Erynnis juvenalis (Fabricius, 1793) (Juvenal's Duskywing)

We found five adults of Juvenal's duskywing (Fig. 2G) in March and early April 2012 along the middle and western portions of North Cut Road at the northern end of Cumberland Island. Ms. Carol Ruckdeschel also sent us a photo of a Juvenal's duskywing taken on February 24, 2012, in her yard adjacent to the First African Baptist Church.

Erynnis zarucco (Lucas, 1857) (Zarucco Duskywing)

ABUNDANCE: 24 adults were tallied: 3 in 2010, 5 in 2011, and 16 in 2012.
SITES: Raccoon Key, Dungeness Ruins area, Stafford Old Field, Plum Orchard, Cumberland Wharf Ruins, along the western portion of North Cut Road, and at Christmas Creek.
FLOWERS VISITED: *Diodia teres, Erechites hieracifolia, Lespedeza hirta*, and *Phyla nodiflora.*
HOST PLANTS: We found larvae on *Indigofera carolinianus* (Fabaceae) growing at Stafford Old Field on June 26, 2010.
DATES: Mar 9-10 (2012), Apr 3 (2012), Jun 26 (2010), Sep 1-2-3, 19, 21 (2012), Sep 26 (2010), Sep 30 (2011), Oct 1 (2011).
NOTE: Also reported from Sapelo Island (Minno 2012).

Burnsius albescens (Plötz, 1884) White Checkered-Skipper
formerly known as *Pyrgus albescens* (see Li *et al.* 2019)

ABUNDANCE: 9 adults were tallied: 3 in 2010, 6 in 2011, and 0 in 2012.
SITES: Dungeness Ruins area, Plum Orchard, and the Cumberland Wharf Ruins.
HOST PLANTS: On September 26, 2010 we saw a female laying eggs on *Sida ulmifolia* (Malvaceae) near the dock at Plum Orchard.
FLOWERS VISITED: *Galactia volubilis* and *Phyla nodiflora.*
DATES: Aug 20 (2011), Sep 26 (2010), Sep 30 (2011), Oct 1 (2011).

Burnsius oileus (Linnaeus, 1767) (Tropical Checkered-Skipper)
Formerly known as *Pyrgus oileus* (see Li *et al.* 2019)

ABUNDANCE: 7 adults were tallied: 0 in 2010, 3 in 2011, and 4 in 2012.
SITES: Dungeness Ruins area, Plum Orchard, and Cumberland Wharf Ruins.
FLOWERS VISITED: *Galactia volubilis.*
DATES: Mar 8 (2012), Sep 1, 3 (2012), Oct 1-2 (2011).

SUBFAMILY HESPERIINAE (Grass Skippers)

Atalopedes campestris huron (W. H. Edwards, 1863) (Sachem)

ABUNDANCE: 6 adults were tallied: 0 in 2010, 2 in 2011, and 4 in 2012.
SITES: Raccoon Key, Plum Orchard, and along the western portion of North Cut Road.
FLOWERS VISITED: *Diodia teres* and *Phyla nodiflora.*
DATES: Mar 10(2012), Aug 20 (2011), Sep 20-21 (2012).

Calpodes ethlius (Stoll, 1782) (Brazilian Skipper)

On September 21, 2012 we found a few second and third instar caterpillars of the Brazilian Skipper in their shelters on the leaves of *Canna indica* (Cannaceae) growing just east of the Dungeness Greenhouse ruins, southern Cumberland Island. We did not find any adults, which are often secretive.

Copaeodes minima (W. H. Edwards, 1870) (Southern Skipperling)

We found one adult of this tiny butterfly on the grounds of Plum Orchard, central Cumberland Island, on September 20, 2012. The southern skipperling has also been reported from St. Simons Island (Harris 1972).

Euphyes vestris metacomet (T. Harris, 1862) (Dun Skipper)

ABUNDANCE: 15 adults were tallied: 3 in 2010, 4 in 2011, and 8 in 2012.
SITES: Dungeness Ruins area, Plum Orchard, TNC Old Field Northeast of the Stafford House, and at the First African Baptist Church.
FLOWERS VISITED: *Diodia teres* and *Phyla nodiflora*.
DATES: Sep 2, 20 (2012), Sep 26 (2010), Sep 30 (2011), and Oct 1 (2011).

Hylephila phyleus phyleus (Drury, 1773) (Fiery Skipper)

ABUNDANCE: 70 adults were tallied: 13 in 2010, 25 in 2011, and 32 in 2012.
SITES: Raccoon Key, Dungeness Ruins area, Stafford Old Field, Plum Orchard, the western portion of North Cut Road, and along Christmas Creek.
FLOWERS VISITED: *Bacopa monnierii, Borrichia frutescens, Cnidoscolus stimulosus, Elephantopus elatus, Lespedeza hirta*, and *Phyla nodiflora*.
HOST PLANTS: One female was observed laying an egg on *Cynodon dactylon* (Poaceae) near the Dungeness Ruins on September 30, 2011.
DATES: Mar 10 (2012), Apr 5 (2012), May 9-10 (2012), Jun 26-27 (2010), Sep 1,19-20-21 (2012), Sep 26 (2010), Sep 30 (2011), Oct 1 (2011).
PREDATOR: One adult visiting *L. hirta* flowers was caught by a green lynx spider (*Peucetia viridans*) at Stafford Old Field on September 19, 2012.
NOTE: Also reported from St. Simons Island (Harris 1972) and Sapelo Island (Minno 2012).

Lerema accius (J. E. Smith, 1797) (Clouded Skipper)

ABUNDANCE: 7 adults were tallied: 1 in 2010, 3 in 2011, and 3 in 2012.
SITES: Plum Orchard, Willow Pond Trail, Cumberland Wharf Ruins, and along the western and central portions of North Cut Road.
DATES: Mar 9 (2012), Aug 20 (2011), Sep 20 (2012), Sep 27 (2010), Sep 30 (2011), Oct 1 (2011).
NOTE: Also reported from Cabretta Island (Minno 2012).

Lerodea eufala eufala (W. H. Edwards, 1869) (Eufala Skipper)

ABUNDANCE: 3 adults were tallied: 0 in 2010, 1 in 2011, and 2 in 2012.
SITES: Dungeness Ruins area, Dungeness Beach Trail, and along the central portion of North Cut Road east of the First African Baptist Church.
FLOWERS VISITED: *Phyla nodiflora* and *Eupatorium compositifolium*.
DATES: Sep 21 (2012), Oct 2 (2011).
NOTE: Also reported from Jekyll Island and St. Simons Island (Harris 1972) and Sapelo Island (Minno 2012).

Panoquina ocola ocola (W. H. Edwards, 1863) (Ocola Skipper)

ABUNDANCE: 13 adults were tallied: 1 in 2010, 8 in 2011, and 4 in 2012.
SITES: Dungeness Ruins area, Willow Pond, Stafford Old Field, and Northeast Beach.
FLOWERS VISITED: *Lespedeza hirta, Liatris species, Mikania scandens, Pluchea odorata, Phyla nodiflora*, and *Symphyotrichum subulatum*.
DATES: Sep 19 (2012), Sep 26 (2010), Sep 30 (2011), Oct 1 (2011).
PREDATORS: One adult was caught by a phymatid bug on the flowers of *M. scandens* at Northeast Beach on September 26, 2010 and another was caught by a green lynx

spider (*Peucetia viridans*) on *L. hirta* flowers at Stafford Old Field on September 19, 2012.
NOTE: Also reported from Sapelo Island (Minno 2012).

Panoquina panoquin (Scudder, 1863) (Salt Marsh Skipper)
ABUNDANCE: 284 adults were tallied: 152 in 2010, 34 in 2011, and 98 in 2012.
SITES: Dungeness Ruins area and along the trail to the beach, as well as at Raccoon Key, Stafford Old Field, Plum Orchard grounds, Cumberland Wharf Ruins, along North Cut Road, and at the Christmas Creek Salt Marsh.
FLOWERS VISITED: *Borrichia frutescens, Diodia teres, Elephantopus elatus, Erechites hieracifolia*, Galactia volubilis, *Heterotheca subaxillaris, Lespedeza hirta, Mikania scandens, Phyla nodiflora, Pluchea camphorata, Pluchea odorata, Sesuvium portulacastrum*, and *Solidago odora* var *chapmanii*.
DATES: Mar 8 (2012), May 9-10 (2012), Jun 26 (2010), Aug 20 (2011), Sep 1-2-3, 19-20-21 (2012), Sep 26-27 (2010), Sep 30 (2011), Oct 1-2 (2011).
NOTE: Also reported from St. Simons Island and Tybee Island (Harris 1972) and Sapelo Island (Minno 2012).

Polites themistocles themistocles (Latreille, [1824]) (Tawny-edged Skipper)
We found two adults visiting the flowers of *Phyla nodiflora* on September 20, 2011 at the Dungeness Ruins area of southern Cumberland Island.

Polites vibex vibex (Geyer, 1832) (Whirlabout)
ABUNDANCE: 69 adults were tallied: 10 in 2010, 28 in 2011, and 31 in 2012.
SITES: Dungeness Ruins area, Dungeness Dunes Trail, Dungeness Beach, Raccoon Key, Main Road at third Bridge NW area near Morristown, Plum Orchard Grounds, Stafford Beach, Stafford Old Field, TNC Old Field Northeast of the Stafford House, Christmas Creek Salt Marsh, flatwoods SW of Church, along western and central parts of North Cut Road, Northwest Bluffs.
FLOWERS VISITED: *Cnidoscolus stimulosus, Diodia teres, Elephantopus elatus, Galactia volubilis, Phyla nodiflora,* and *Sesuvium portulacastrum.*
HOST PLANTS: We observed a female ovipositing on *Eragrostis amabilis* (Poaceae) near Dungeness Ruins on September 1, 2012 and another ovipositing on *Eremochloa ophiuroides* (Poaceae) along the Main Road at the third bridge to the north on September 3, 2012.
DATES: Apr 4 (2012), May 9-10 (2012), Aug 20 (2011), Sep 1-2-3,19-20-21 (2012), Sep 26-27 (2010), Sep 30 (2011), Oct 1 (2011).

Wallengrenia egeremet (Scudder, 1863) (Northern Broken-Dash)
ABUNDANCE: 10 adults were tallied: 0 in 2010, 4 in 2011, and 6 in 2012.
SITES: Dungeness Ruins area, Plum Orchard Grounds, Willow Pond Trail.
FLOWERS VISITED: *Diodia teres, Phyla nodiflora.*
DATES: Sep 20 (2012), Sep 30 (2011).

Wallengrenia otho otho (J. E. Smith, 1797) (Southern Broken-Dash)
ABUNDANCE: 30 adults were tallied: 1 in 2010, 19 in 2011, and 10 In 2012.
SITES: Raccoon Key, Dungeness area, Dungeness Beach, Plum Orchard Grounds, Stafford Old Field SW, Northwest Bluffs.
FLOWERS VISITED: *Cirsium nuttallii, Galactia volubilis, Lanatana strigocamara, Lespedeza hirta, Melanthera nivea, Phyla nodiflora.*
DATES: May 10 (2012), Aug 20 (2011), Sep 3, 19-20-21 (2012), Sep 26 (2010), Sep 30 (2011), Oct 1 (2011).
PREDATORS: Two adults were caught by green lynx spiders (*Peucetia viridans*) on *L. hirta* flowers at Stafford Old Field on September 19, 2012.

SUBFAMILY MEGATHYMIDAE (Giant-Skippers)
Megathymus yuccae yuccae (Boisduval & Le Conte, [1837]) (Yucca Giant-Skipper).
ABUNDANCE: 3 adults were tallied, all in 2012.
SITES: Dungeness Ruins area, Dungeness Beach Trail, Stafford Beach, Stafford Old Field, Christmas Creek dunes, North Cut

Road West.
HOST PLANTS: We found immatures on Spanish bayonet (*Yucca aloifolia*), Adam's needle (*Yucca filamentosa*), and moundlily (*Yucca gloriosa*) in the Agavaceae. Spanish bayonet has been used as a landscaping plant and mostly occurs around current and former house sites. Adam's needle grows in dry pinelands and oak hammocks interior of the beach. Moundlily grows on beach dunes.
DATES: Adults were found on Mar 9 and Apr 4 (2012), eggs were found on yuccas on Mar 10 and Apr 4 (2012), tents were seen on Feb 13, Mar 9, May 9-10, Sep 1-2, 21 (2012).
NOTES: Males set up territories and perch on sticks, leaves, or the ground (Fig. 2E) in open areas with yuccas, and fly around periodically or chase any other large flying insect in sight that may be females. Also reported from Cabretta Island (Minno 2012).

FAMILY PAPILIONIDAE (SWALLOWTAILS)
SUBFAMILY PAPILIONINAE
Battus philenor philenor (Linnaeus, 1771) (Pipevine Swallowail)
ABUNDANCE: 14 adults were tallied: 3 in 2010, 0 in 2011, and 11 in 2012.
SITES: Along the main road north of Stafford Old Field, Plum Orchard grounds, along the western portion of North Cut Road, and at the First African Baptist Church.
FLOWERS VISITED: *Cirsium nuttallii*.
HOST PLANTS: We observed females ovipositing on *Aristolochia serpentaria* (*Aristolochiaceae*) in the longleaf pine/turkey oak forest along the western portion of North Cut Road on April 4, 2012 and in the mown area in back of the Plum Orchard house on May 9, 2012. We also found this plant along the road near the First African Baptist Church.
DATES: Apr 3-4 (2012), May 9 (2012), Jun 26 (2010), Sep 26-27 (2010).

Protographium marcellus floridensis (W. Holland, [1898]) (Zebra Swallowtail)
ABUNDANCE: 112 adults were tallied: 1 in 2010, 6 in 2011, and 105 in 2012.
SITES: Main Road in the vicinity of Duckhouse Trail/Yankee Paradise Campsite, Main Road north of Plum Orchard road, Main Road north of Stafford, Old River Trail East, Plum Orchard Grounds, Stafford Beach, Stafford Old Field, Carol Ruckdeschel yard, First African Church area, northern portion of the Main Road, North Cut Road at Weather Station, western and middle portions of North Cut Road, Northwest Bluffs.
FLOWERS VISITED: *Diodia teres, Prunus umbellata*. We also observed an adult feeding on horse manure on March 6, 2011.
HOST PLANTS: We found an egg and three young larvae on *Asiminia angustifolia* (Annonaceae) on April 4, 2012 along the western part of North Cut Road.
DATES: Feb 13 (2012), Mar 6 (2011), Mar 8-9-10 (2012), Apr 3-4-5 (2012), May 10 (2012), Jun 27 (2010), Aug 20 (2011), Sep 1, 3 (2012).

Heraclides cresphontes (Cramer, 1777) (Giant Swallowtail)
ABUNDANCE: 9 adults were tallied: 2 in 2010, 0 in 2011, and 7 in 2012.
SITES: Dungeness Ruins area, Dungeness Beach, Raccoon Key Old River Trail East, Plum Orchard, north end of the Main Road.
FLOWERS VISITED: *Cirsium nuttallii, Cnidoscolus stimulosus*.
DATES: Mar 8 (2012), Apr 3 (2012), May 9-10 (2012), Jun 26-27 (2010), Sep 1-2, 21 (2012).
NOTE: Also reported from St. Simons Island (Harris 1972).

Papilio polyxenes asterius (Stoll, 1782) (Black Swallowtail)
ABUNDANCE: 9 adults were tallied: 0 in 2010, 2 in 2011, and 7 in 2012.
SITES: Stafford Old Field and Plum Orchard.
HOST PLANTS: We observed a female ovipositing on *Spermolepis divaricata* (Apiaceae) on February 13, 2012 at Plum Orchard.
DATES: Feb 13 (2012), Mar 6 (2011), Mar 8-9 (2012), Apr 3, 5 (2012).

Pterourus glaucus maynardi (Gauthier, 1984) (Eastern Tiger Swallowtail)
ABUNDANCE: 4 adults were tallied 1 in 2010, 0 in 2011, and 3 in 2012.
SITES: Main Road at Morristown, North end of the Main Road,

Northwest Bluffs.
DATES: Mar 10 (2012), Apr 3, 5 (2012), Jun 27 (2010).

Pterourus palamedes palamedes (Drury, 1773) (Palamedes Swallowtail)

ABUNDANCE: 115 adults were tallied: 44 in 2010, 3 in 2011, and 74 In 2012.
SITES: Dormitory area, Dungeness Ruins area, Raccoon Key, Dungeness Beach, Dungeness Dunes Trail, Main Road at Morristown, Main Road, just S of Road to Yankee Paradise, Plum Orchard, Plum Orchard Road and Main Road N 2 miles, Stafford Beach, Stafford Old Field, Willow Pond Trail, Christmas Creek, First African Church area, North end of the Main Road, West and middle sections of North Cut Road, Northwest Bluffs.
FLOWERS VISITED: *Cirsium nuttallii, Cnidoscolus stimulosus.*
DATES: Feb 13 (2012), Mar 8-9-10 (2012), Apr 3-4-5 (2012), May 9-10 (2012), Jun 26-27 (2010), Sep1-2-3, 19, 21 (2012), 26-27 (2010), Sep 30 (2011), Oct 1-2 (2011).
NOTE: Also reported from Jekyll Island and St. Simons Island (Harris 1972).

Pterourus troilus troilus (Linnaeus, 1758) (Spicebush Swallowtail)

ABUNDANCE: 8 adults were tallied: 2 in 2010, 0 in 2011, and 6 in 2012.
SITES: Dungeness Ruins area, Raccoon Island, Plum Orchard, Stafford Old Field.
FLOWERS VISITED: *Cirsium nuttallii.*
DATES: Mar 8 (2012), Jun 26-27 (2010), Sep 1,3 (2012).
NOTE: Also reported from St. Simons Island (Harris 1972).

FAMILY PIERINDAE (Sulphurs and Whites)
SUBFAMILY COLIADINAE (Sulphurs)
Abaeis nicippe (Cramer, 1779) (Sleepy Orange)

ABUNDANCE: 73 adults were tallied: 5 in 2010, 25 in 2011, and 43 in 2012.
SITES: Dungeness Ruins area, Dungeness Beach, Dungeness Dunes Trail, Raccoon Key, Southeast Beach, Plum Orchard, Stafford Old Field, TNC Old Field north of Stafford House, First African Church area, North end of the Main Road, Middle section of North Cut Road.
FLOWERS VISITED: *Cirsium nuttallii.*
HOST PLANTS: On September 1, 2012 we found a pupa on a wall of Plum Orchard and on September 2, 2012 we found a last instar larva on *Senna occidentalis* (Fabaceae) at the TNC Old Field north of Stafford House.
DATES: Mar 9 (2012), Apr 5 (2012), May 10 (2012), Aug 20-21 (2011), Sep 1-2-3, 21 (2012), Sep 30 (2011), Oct 1 (2011).

Colias eurytheme (Boisduval, 1852) (Orange Sulphur)

One Orange Sulphur was seen on March 9, 2012 flying along the western portion of North Cut Road, northern Cumberland Island. The Orange Sulphur has also been reported from St. Simons Island (Harris 1972) and Sapelo Island (Minno 2012).

Eurema daira daira (Godart, 1819) (Barred Yellow) (Fig. 2H)

ABUNDANCE: 1,583 adults were tallied: 244 in 2010, 71 in 2011, and 1,268 in 2012.
SITES: Main Road at third Bridge to the north, Main Road 2 miles north of Plum Orchard Road, Plum Orchard, Stafford Old Field, TNC Old Field north of Stafford House, First African Church area, Western, middle, and eastern portion of North Cut Road, Northwest Bluffs, Weather Station Area, Dungeness Ruins area, Dungeness Beach, Dungeness Dunes Trail, Raccoon Key, Southeast Beach.
FLOWERS VISITED: *Asemeia violacea, Aeschynomene viscidula, Conyza canadensis, Crotalaria rotundifolia, Diodia teres, Elephantopus elatus, Galactia elliottii, Galactia regularis, Galactia volubilis, Phyla nodiflora, Sida rhombifolia.* We also observed several dozen adults feeding at a particular pile of horse manure on September 1, 2012, on the main road at Stafford Old Field.
HOST PLANTS: Females were seen ovipositing on *Aeschynomene viscidula* (Fabaceae) on June 26, 2010, September 26, 2010, and September 20, 2012.
DATES: Feb 13 (2012), Mar 8-9-10 (2012), Apr 3-4 (2012), May 9-10 (2012), Jun 26-27 (2010), Aug 20-21 (2011), Sep 1-2-3, 19-20-21

(2012), 26-27 (2010), 30 (2011).
NOTE: Winter forms first began to appear in September. Also reported from Sapelo Island (Minno 2012).

Nathalis iole Boisduval, 1836 (Dainty Sulphur)

We only found three Dainty Sulphurs on Cumberland Island, two at the TNC old field northeast of the Stafford House and one in the dunes at Christmas Creek, all on Sep 2, 2012.

Phoebis sennae eubule (Linnaeus, 1767) (Cloudless Sulphur)

ABUNDANCE: 266 adults were tallied: 29 in 2010, 36 in 2011, and 200 in 2012.
SITES: Dormitory area, Dungeness Ruins area, Dungeness Beach, Dungeness Dunes Trail, Dungeness Tabby House area, Raccoon Key, Southeast Beach, Old River Trail East, Main Road at Duckhouse Trail/Yankee Paradise Campsite, Main Road 2 miles north of Plum Orchard Road, Plum Orchard, Stafford Beach, Stafford Old Field, TNC Old Field N of Stafford House, Carol Ruckdeschel yard, First African Church area, Western and middle portions of North Cut Road, Northwest Bluffs, Weather Station area.
FLOWERS VISITED: *Canna indica, Cirsium nuttallii, Ipomoea cordatotriloba, Lantana strigocamara, Phyla nodiflora, Prunus umbellata, Salvia coccinea, Sesbania herbacea.*
HOST PLANTS: Females were seen ovipositing on *Senna obtusifolia* (Fabaceae) near the Dungeness Ruins on August 21 and September 30, 2011 and at Raccoon Key on May 10 and September 21, 2012.
DATES: Feb 13 (2012), Mar 6 (2011), Mar 8-9 (2012), Apr 3-4-5 (2012), May 9-10 (2012), Aug 20-21 (2011), Sep 1-2-3, 19-20-21 (2012), Sep 26-27 (2010), Sep 30 (2011), Oct 1 (2011).
NOTE: Also reported from Sapelo and Cabretta islands (Minno 2012).

Pyrisitia lisa lisa (Boisduval & Le Conte, [1830]) (Little Yellow)

ABUNDANCE: 21 adults were tallied, all in 2012.
SITES: Raccoon Key, Main Road at third Bridge to the north, Plum Orchard, TNC Old Field north of Stafford House.
FLOWERS VISITED: *Asemeia violacea, Diodia teres, Phyla nodiflora.* One feeding at a pile of horse manure on Sep 19, 2012 at TNC Old Field north of Stafford House.
DATES: Sep 3, 19-20-21 (2012).
NOTE: Also reported from St. Simons Island (Harris 1972) and Sapelo Island (Minno 2012).

SUBFAMILY PIERINAE (Whites)
Ascia monuste phileta (Fabricius, 1775) (Great Southern White)

ABUNDANCE: 89 adults were tallied, all in 2012.
SITES: Dungeness Ruins area, Dungeness Dunes Trail, Raccoon Key, Main Road south of 1st bridge, Plum Orchard, Stafford Beach, Christmas Creek Salt Marsh.
FLOWERS VISITED: *Asemeia violacea, Borrichia frutescens, Cnidoscolus stimulosus, Diodia teres, Lanatana strigocamara, Limonium carolinianum, Phyla nodiflora, Sesuvium portulacastrum.*
DATES: Apr 5, May 9-10, Sep 1, 3, 19, 21 (2012).
NOTE: Also reported from St. Simons Island (Harris 1972).

FAMILY LYCAENIDAE (Hairstreaks and Blues)
SUBFAMILY THECLINAE (Hairstreaks)
Atlides halesus halesus (Cramer, 1777) (Great Purple Hairstreak)

Sarah Corbett Heath found two adults in central Cumberland Island on March 9, 2012 (Fig. 2I). We also observed a probable adult at Plum Orchard on April 3, 2012. The Great Purple Hairstreak has been reported from Jekyll Island (Harris 1972).

Callophrys (*Incisalia*) *henrici henrici* (Henry's Elfin)

We found three adults in an oak forest in association with *Ilex opaca*, a likely host plant, northeast of Plum Orchard on March 6, 2011. Sarah Corbett Heath also sent us a photo of a Henry's elfin that she found on March 9, 2012 (Fig. 2K) in central Cumberland Island. Also reported from Jekyll and St. Simons islands . (Harris 1972).

Callophrys (*Mitoura*) *gryneus sweadneri* (F. Chermock, 1945) (Sweadner's Juniper Hairstreak)

ABUNDANCE: 7 adults were

tallied: 1 in 2010, 5 in 2011, and 1 in 2012.
SITES: Stafford Old Field, Northwest Bluffs. The likely host plant, *Juniperus virginiana*, is a locally common tree in these areas.
FLOWERS VISITED: *Lespedeza hirta*.
DATES: Mar 6, 2011, Sep 19 (2012), Sep 26 (2010), Oct 1 (2011).

Calycopis cecrops (Fabricius, 1793) (Red-banded hairstreak)
ABUNDANCE: 60 adults were tallied: 5 in 2010, 9 in 2011, and 47 In 2012.
SITES: Dungeness Ruins area, Dungeness Dunes Trail, Plum Orchard, Main Road 2 miles north of Plum Orchard Road, Stafford Beach, Willow Pond Trail, western and middle portions of North Cut Road, Eastern end of North Cut Road at Northeast Beach, Northwest Bluffs.
FLOWERS VISITED: *Erechites hieracifolia, Serenoa repens.*
DATES: Feb 13 (2012), Mar 8-9-10 (2012), Apr 3 (2012), May 9-10 (2012), Jun 26-27 (2010), Aug 20 (2011), Sep 2, 21 (2012), Sep 26 (2010), Sep 30 (2011), Oct 2 (2011).
NOTE: Also reported from Sapelo Island (Minno 2012).

Satyrium (*Fixsenia*) *favonius favonius* (J. E. Smith, 1797) (Southern Oak Hairstreak)
ABUNDANCE: 10 adults were tallied, all in 2012.
SITES: Main Road north of Plum Orchard Road, Stafford Beach, Middle portion of North Cut Road.
FLOWERS VISITED: *Serenoa repens*.
DATES: May 9-10 (2012).
NOTE: Also reported from Jekyll Island and St. Simons Island (Harris 1972).

Strymon melinus melinus Hübner, 1818 (Gray Hairstreak) (Fig.2L)
ABUNDANCE: 18 adults were tallied: 3 in 2010, 1 in 2011, and 14 in 2012.
SITES: Main Road at third Bridge to the north, Plum Orchard, Stafford Old Field, Christmas Creek dunes, Western and middle portions of North Cut Road, Northwest Bluffs, Dungeness Ruins area, Dungeness Beach, Raccoon Key.
FLOWERS VISITED: *Diodia teres, Elephantopus elatus, Galactia volubilis, Lespedeza hirta.*
HOST PLANTS: A female was seen ovipositing on the flower buds of *Desmodium paniculatum* (Fabaceae) on September 3, 2012 along the main road at the third bridge to the north.
DATES: Apr 5 (2012), May 10 (2012), Sep 2-3, 19 (2012), Sep 26 (2010), Oct 2 (2011).
NOTE: Also reported from Sapelo Island (Minno 2012).

Parrhasius m-album (Boisduval & Le Conte, [1833] (White-M Hairstreak)
Only two adults were observed, both at Plum Orchard. One on Aug 20, 2011 and another on Sep 1, 2012.

SUBFAMILY POLYOMMATINAE (Blues)
Brephidium pseudofea insularis Pavulaan & Gatrelle, 1999 (Eastern Pygmy-Blue)
ABUNDANCE: 13 adults were tallied: 1 in 2010, 3 in 2011, and 9 in 2012.
SITES: Christmas Creek Salt Marsh, Northwest Bluffs, Raccoon Key.
FLOWERS VISITED: *Borrichia frutescens, Diodia teres, Galactia volubilis, Limonium carolinianum.*
DATES: Sep 2-3, 21 (2012), Sep 27 (2010), Oct 1 (2011).
NOTE: Also reported from St. Simons Island (Harris 1972)

Celastrina negecta (W. H. Edwards, 1862) (Summer Azure)
The only summer azure seen was flying in the pine/oak forest along the western portion of North Cut Road on April 4, 2012.

Hemiargus ceraunus antibubastus Hübner, 1818 (Ceraunus Blue)
ABUNDANCE: 71 adults were tallied: 0 in 2010, 24 in 2011, and 47 in 2012.
SITES: Dungeness Ruins area, Dungeness Beach, Dungeness Dunes Trail, Raccoon Key, Plum Orchard, Stafford Old Field, TNC Old Field north of Stafford House, Christmas Creek Salt Marsh, First African Church area, Western and middle portions of North Cut Road, Northwest Bluffs.
FLOWERS VISITED: *Cnidoscalus stimulosus, Croton glandulosa, Diodia teres, Galactia volubilis, Lespedeza hirta, Phyla nodifora.*
HOST PLANTS: A female was seen ovipositing on the flower buds of *Lespedeza hirta* at Stafford Old

Field on September 19, 2012.
DATES: Apr 5 (2012), May 10 (2012), Aug 20 (2011), Sep 1-2-3, 19-20-21 (2012), Sep 30 (2011), Oct 1-2 (2011).
NOTE: Also reported from St. Simons Island and Tybee Island (Harris 1972) and Sapelo Island (Minno 2012).

Leptotes cassius theonus (Lucas, 1857) (Cassius Blue)
ABUNDANCE: 16 adults were tallied: 0 in 2010, 2 in 2011, and 14 in 2012.
SITES: Raccoon Key, First African Church area, Western and middle portions of North Cut Road, Northwest Bluffs, North Weather Station.
FLOWERS VISITED: *Crotalaria pallida, Pluchea odorata.*
HOST PLANTS: On September 3, 2012 we observed a female ovipositing on and found a last instar larva on the flower buds of *Galactia volubilis* in the Northwest Bluffs area. We also found a last instar larva that was attended by a carpenter ant (*Camponotis* sp.) on the flower buds of *Galactia elliottii* near the North Weather Station.
DATES: Sep 2-3, 21 (2012), Oct 1-2 (2011).
NOTE: Also reported from Sapelo Island (Minno 2012).

FAMILY RIODINIDAE (Metalmarks)
SUBFAMILY RIODININAE
Calephelis virginiensis (Guérin-Méneville, [1832]) (Little Metalmark)
We found a last instar larva on *Cirsium horridulum* (Asteraceae) and one adult feeding at the flowers of *Heterotheca subaxillaris* along Dungeness Dunes Trail, near the beach on southern Cumberland Island, on September 21, 2012. Sarah Corbett Heath also sent us a photo of an adult that she found on March 9, 2012 (Fig. 2J) in a coastal area of east-central Cumberland Island.

FAMILY NYMPHALIDAE (Brush-footed Butterflies)
SUBFAMILY APATURINAE (Emperors)
Asterocampa celtis (Boisduval & Le Conte, [1835]) (Hackberry Emperor)
We briefly observed a probable hackberry emperor in the Dungeness Ruins area of southern Cumberland Island on September 30, 2011. The larval host plant, *Celtis laevigata*, is locally common in the area and other places.

Asterocampa clyton (Boisduval & Le Conte, [1835]) (Tawny Emperor)
We found single adults on June 26, 2010, May 9, 2012, and September 3, 2012 in the Northwest Bluffs area. The host plant, *Celtis laevigata*, is locally common in the area. On June 26, 2010 we found several larvae (Fig. 2C) on the leaves of a small *C. laevigata* in the same area.

SUBFAMILY DANAINAE (Milkweed Butterflies)
Danaus (*Danaus*) *plexippus plexippus* (Linnaeus, 1758) (Monarch)
ABUNDANCE: 8 adults were tallied: 1 in 2010, 0 in 2011, and 7 in 2012.
SITES: Dungeness Ruins area, Raccoon Key, Main Road just north of Stafford House, North end of Main Road, Plum Orchard, Western and middle portions of North Cut Road.
FLOWERS VISITED: *Bidens alba.*
HOST PLANTS: On April 4, 2012 we found a few eggs of the Monarch or perhaps the Queen on *Asclepias humistrata* in the pine/oak forest along the western portion of North Cut Road.
DATES: Feb 13 (2012), Apr 4-5 (2012), May 9 (2012), Sep 21 (2012), Sep 26 (2010).
NOTE: Also reported from Jekyll Island (Harris 1972), Sapelo and Cabretta islands (Minno 2012).

Danaus (*Anosia*) *gilippus berenice* (Cramer, 1779) (Queen)
ABUNDANCE: 4 adults were tallied: 0 in 2010, 1 in 2011, and 3 in 2012.
SITES: Plum Orchard, Carol Ruckdeschel yard, Christmas Creek Salt Marsh.
FLOWERS VISITED: *Borrichia frutescens, Prunus umbellata.*
DATES: Feb 13 (2012), May 9 (2012), Sep 2 (2012), Sep 30 (2011).
NOTE: Also reported from Jekyll Island (Harris 1972).

SUBFAMILY LIMENITIDINAE (Admirals)
Limenitis arthemis astyanax (Fabricius, 1775) (Red-spotted Purple) (Fig. 2D)
ABUNDANCE: 3 adults were tallied: 2 in 2010, 0 in 2011, and 1 in 2012.
SITES: North end of the Main

Road, Main Road at Duckhouse Trail/Yankee Paradise Campsite.
HOST PLANTS: Feeding damage from the red-spotted purple was observed on a leaf of *Prunus serotina*.
DATES: Mar 9 (2012), Jun 26-27 (2010).

Limenitis archippus floridensis Strecker, 1878 (Viceroy)
ABUNDANCE: 3 adults were tallied: 1 in 2010, 0 in 2011, and 2 in 2012.
SITES: Dungeness Dunes Trail, Raccoon Key.
DATES: Jun 27 (2010), Sep 21 (2012).
NOTE: Also reported from Jekyll Island (Harris 1972).

SUBFAMILY HELICONIINAE (Passionflower Butterflies)
Agraulis vanillae nigrior Michener, 1942 (Gulf Fritillary)
ABUNDANCE: 443 adults were tallied: 58 in 2010, 91 in 2011, and 290 in 2012.
SITES: Main Road, various locations, Main Road at third Bridge to the north, Dormitory area, Dungeness Ruins area, Dungeness Beach, Dungeness Dunes Trail, Woods east of the Greenhouse Ruins, Raccoon Key, Plum Orchard, Stafford Old Field, TNC Old Field north of Stafford House, Willow Pond Trail, Christmas Creek, First African Church area, North Cut Road Flatwoods, Western, middle, and eastern portions of North Cut Road, NE Beach at eastern end of North Cut Road, Northwest Bluffs, Weather Station.
FLOWERS VISITED: *Asemeia violacea, Bidens alba, Borrichia frutescens, Canna indica, Cirsium nuttallii, Cnidoscolus stimulosus, Diodia teres, Elaphantopus elatus, Jacquemontia tamnifolia, Lantana strigocamara, Lespedeza hirta, Liatris* sp., *Mikania scandens, Phyla nodiflora, Pityopsis graminifolia, Pluchea odorata, Salvia coccinea, Senna obtusifolia, Sesuvium portulacastrum*.
DATES: Apr 3-4 (2012), May 9-10 (2012), Jun 26 (2010), Aug 20 (2011), Sep 1-2-3, 19-20-21 (2012), Sep 26-27 (2010), Sep 30 (2011), Oct 1-2 (2011).
NOTE: Also reported from Sapelo & Cabretta islands (Minno 2012).

Heliconius charithonia tuckeri W. Comstock & F. Brown, 1950 (Zebra Heliconian)
ABUNDANCE: 4 adults were tallied, all in 2012.
SITES: Dungeness Ruins area, Plum Orchard.
FLOWERS VISITED: *Lantana strigocamara, Melanthera nivea*.
DATES: Sep 19-20-21 (2012).

SUBFAMILY NYMPHALINAE (Brushfooted Butterflies)
Anartia jatrophae guantanamo Munroe, 1942 (White Peacock)
One white peacock was observed visiting the flowers of *Phyla nodiflora* on Raccoon Island, southeastern Cumberland Island, on September 3, 2012.

Hypolimnas misippus (Linnaeus, 1764) (Mimic)
While conducting a vegetation survey with the fire effects monitoring crew, Sarah Corbett Heath found an adult male dead on the ground at Cumberland Island in August 2017 (Fig. 2M, N).

Junonia coenia Hübner, [1822] (Common Buckeye)
ABUNDANCE: 106 adults were tallied: 8 in 2010, 18 in 2011, and 80 in 2012.
SITES: Dungeness Ruins area, Dungeness Dunes Trail, Raccoon Key, Old River Trail East, Plum Orchard, Stafford Old Field, Christmas Creek saltmarsh, First African Church area, western, middle, and eastern portions of North Cut Road, NE Beach, Northwest Bluffs.
FLOWERS VISITED: *Diodia teres, Elephantopus elatus, Eupatorium compositifolium, Lespedeza hirta, Phyla nodiflora, Serenoa repens*.
One adult seen feeding at a pile of horse manure on October 1, 2010, at NE Beach.
HOST PLANTS: We found larvae on *Agalinis fasciculata* (Orobanchaceae) at Stafford Old Field in September 2012.
DATES: Feb 13 (2012), Mar 7 (2011), Mar 8-9-10 (2012), Apr 3-4-5 (2012), May 9-10 (2012), Jun 26-27 (2010), Sep 1, 3, 19-20-21 (2012), Sep 26 (2010), Sep 30 (2011), Oct 1-2 (2011).
NOTE: Also reported from Sapelo Island (Minno 2012).

Figure 2. Butterflies of Cumberland Island, Georgia. A: Red admiral (*Vanessa atalanta*), B: Pearl crescent (*Phyciodes tharos*), C: Larvae of the tawny emperor (*Asterocampa clyton*), D: Red-spotted purple (*Limenitis arthemis astyanax*), E: Yucca Giant-Skipper (*Megathymus yuccae*), F: Sleepy duskwing (*Erynnis brizo*), G: Juvenal's duskwing (*Erynnis juvenalis*), H. Courting barred yellows (*Eurema daira*), I: Great purple hairstreak (*Atlides halesus*), J: Little metalmark (*Calephelis virginiensis*), K: Henry's elfin (*Callophrys henrici*), L: Gray hairstreak (*Strymon melinus*), and M-N: Mimic (*Hypolimnas misippus*). (Photos B, I, J, K, M, and N are by Sarah L. Corbett Heath).

Nymphalis antiopa antiopa (Linnaeus, 1758) (Mourning Cloak)

ABUNDANCE: 4 adults were tallied: 0 in 2010, 1 in 2011, and 3 in 2012.
SITES: Main Road at Morristown, Main Road just south of North Cut Road, Northwest Bluffs, Forest east of Greenhouse Ruins (at bait).
DATES: Mar 6 (2011), Mar 10 (2012).
NOTE: Except for the one in a bait trap, the few others seen were perching on the ground on the Main Road.

Phyciodes phaon phaon (W. H. Edwards, 1864) (Phaon Crescent)

ABUNDANCE: 185 adults were tallied 78 in 2010, 1 in 2011, and 106 in 2012.
SITES: Dungeness Ruins area, Dungeness Beach, Dungeness Dunes Trail, Forest east of the Greenhouse Ruins, Raccoon Key, Plum Orchard, Stafford Old Field.
FLOWERS VISITED: *Diodia teres, Phylla nodiflora, Polypremum procumbens*.
DATES: Apr 5 (2012), May 10 (2012), Jun 26-27 (2010), Sep 1, 3, 20-21 (2012), Sep 26-27 (2010), Sep 30 (2011).
NOTE: Also reported from St. Simons Island and Tybee Island (Harris 1972).

Phyciodes tharos tharos (Drury, 1773) (Pearl Crescent)

Sarah Corbet Heath sent us a photo of one she found on Cumberland Island on March 9, 2012 (Fig. 2B).

Polygonia interrogationis (Fabricius, 1798) (Question Mark)

We found one in a bait trap on September 3, 2012 in the forest east of the Greenhouse Ruins, southern Cumberland Island.

Vanessa atalanta rubria (Fruhstorfer, 1909) (Red Admiral) (Fig. 2 A)

ABUNDANCE: 24 adults were tallied: 0 in 2010, 1 in 2011, and 22 in 2012.
SITES: Dormitory area, Dungeness Ruins area, Dungeness Dock, Forest east of the Greenhouse Ruins, Tabby House area, Raccoon Key, Main Road near first private house, Main Road just north of Plum Orchard Road, North end of the Main Road, Old River Trail East, Plum Orchard, Stafford Old Field, Middle portion of North Cut Road, Northwest Bluffs.
FLOWERS VISITED: We found one in a bait trap at Old River Trail East on March 10, 2012, and another in a bait trap in the forest east of the Greenhouse Ruins on the same day.
HOST PLANTS: Several larvae were found on *Boehmeria cylindrica* (Urticaceae) growing along the margin of the man-made pond in back of Plum Orchard on April 3, 2012.
DATES: Feb 13 (2012), Mar 6 (2011), Mar 8-9-10 (2012), Apr 3-4-5 (2012), May 10 (2012).
NOTE: Also reported from Sapelo and Cabretta islands (Minno 2012).

Vanessa cardui (Linnaeus, 1758) (Painted Lady)

ABUNDANCE: 19 adults were tallied, all in 2012.
SITES: Dungeness Ruins area, Forest east of the Greenhouse Ruins, Raccoon Key, Stafford Old Field, TNC Old Field north of Stafford House, Christmas Creek Salt Marsh, Northeast Beach, North Weather Station.
FLOWERS VISITED: *Cirsium nuttallii, Diodia teres, Jacquemontia tamnifolia, Mikania scandens, Phyla nodiflora, Sesbania herbacea.*
DATES: Sep 1-2-3, 20-21 (2012).

Vanessa virginiensis (Drury, 1773) (American Lady)

ABUNDANCE: 18 adults were tallied: 2 in 2010, 0 in 2011, and 16 in 2012.
SITES: Dining Hall area, Dungeness Ruins area, Raccoon Key, Plum Orchard, Stafford Old Field, Western and middle portions of North Cut Road.
FLOWERS VISITED: *Borrichia frutescens, Phyla nodiflora.*
HOST PLANTS: We found larvae on *Gnaphalium purpureum* (Asteraceae) at Plum Orchard on April 3, 2012 and Stafford Old Field on April 3, 2012 and on *Gnaphalium antillarum* at Raccoon Key on March 9, 2012.
DATES: Mar 8-9 (2012), Apr 3-4-5 (2012), May 10 (2012), Sep 26 . (2010).
NOTE: Also reported from Sapelo Island (Minno 2012).

SUBFAMILY SATYRINAE (Satyrs and Woodnymphs)
Hermeuptychia sosybius (Fabricius, 1793) (Carolina Satyr)

ABUNDANCE: 51 adults were tallied: 8 in 2010, 7 in 2011, and 36 in 2012.
SITES: Dungeness Ruins area, Main Road at Sea Camp Road, Old River Trail East, Plum Orchard, Stafford Beach, Willow Pond Trail, Western portion of North Cut Road, Northwest Bluffs.
FLOWERS VISITED: At bait on Mar 10 (2012) at Old River Trail East.
HOST PLANTS: We found two in a bait trap at Old River Trail East on Mar 10, 2012.
DATES: Mar 8-9-10 (2012), Apr 3-4 (2012), May 10 (2012), Jun 26-27 (2010), Aug 20 (2011), Sep 1, 19-20-21 (2012), Sep 26 (2010), Sep 30 (2011), Oct 2 (2011).
NOTE: Also reported from Sapelo Island (Minno 2012). At the time of our field work, we did not know to look for the Intricate Satyr (*Hermeuptychia intricata*), which was not formally described for more than a year after our field work (Cong & Grishin 2014). Both species are likely to be present on Cumberland Island.

Megisto cymela (Cramer, 1777) (Little Wood-Satyr)

ABUNDANCE: 74 adults were tallied, all in 2012.
SITES: Dormitory area, Dungeness Ruins area, Raccoon Key. Plum Orchard, Stafford Beach, Stafford Old Field, North end of the Main Road, Western portion of North Cut Road, Northwest Bluffs.
DATES: Apr 3-4-5 (2012).

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

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PHOTOS OF TWO MOTHS LISTED IN THE STATE REPORT OF GEORGIA

BY

JAMES K. ADAMS

***Spodoptera latifascia* , Fall Line Sandhills WMA, western section, Taylor Co.: August 29-Sept. 1**

***Hyparpax aurora*, Fall Line Sandhills WMA, western section, Taylor Co.: August 29-Sept. 1**

FALL BUTTERFLY AND MOTH COLLECTING IN SOUTHERN ARIZONA

BY
KELLY RICHERS

Many serious lepidopterists visit the state of Arizona, as it is famous for the huge outpouring of species of Lepidoptera during the summer monsoons. Far fewer have the opportunity to visit and collect during the fall after the September school sessions start. This fall the author had an invitation to attend a small gathering in Brown Canyon in the Baboviquari Range the weekend of September 27 through the 29th. This range is to the west of Arivaca and further west of the usual Interstate 19 corridor to Nogales.

In planning this trip, research indicated that a somewhat rare pierid, *Neophasia terloooii*, might be flying. This butterfly, the Chiricahua Pine White, has a white male and deep red female, and is certainly a target species, as it only flies in late September/October in a few mountain ranges in Arizona within the US. So, I planned to visit Madera Canyon, which is a reported location, and then that evening proceed to Brown Canyon, much further west and south across the other side of Arivaca.

Leaving Bakersfield at 9 p.m. to avoid Los Angeles traffic, I arrived at the picnic area near the top of Madera Canyon Road after paying my $5 daily use fee near the entrance to the canyon. Madera Canyon, an internationally famous birding site, opens toward the west at the base of the canyon, in desert habitat, and has a winding road that moves toward the south as it climbs to the upper and final parking lot at about 5400' elevation. There are many locations along the canyon to collect in the summer, but the streambed where the pines are located (habitat for *terlooii*) is at the top parking lot area only.

The time was actually too early for butterflies to be flying, at around 8 a.m., so I wandered for a bit, looking at the area, which was populated by only a few hikers, then tried to search in earnest beneath the scattered pine trees. Nothing was flying. No butterflies, at any rate. The sun takes some time to break over the high peaks.

For several hours I hiked the slopes, but no *terlooii* were to be seen. Eventually I walked along the grassy areas next to the stream in a more oak habitat with widely scattered trees, and a butterfly I had never seen pòpped up. This was a large butterfly with dark coloration and a reddish fringe.

This butterfly, which I caught, turned out to be *Gryocheilus patrobas tritonia*, and as it turns out, it also only flies in September, but about two weeks earlier than *terlooii*. Thus, I was able to place my timing as about two weeks too early for *terlooii* in this area through rapid mathematical calculation. I resumed my wandering through the grassy areas, where I was able to take a half dozen fresh specimens of *patrobas tritonia*, making what initially appeared to be an unsuccessful outing very successful indeed, as this was a desirable new species for me, although apparently not rare in the habitat.

However, around noon the inevitable clouds moved in, and while as a moth collector this is nor normally an issue, as a butterfly collector it certainly is. Since Brown Canyon is located an hour and a half to the west over rather tenuous roads, I decided to head out, and just in time.

Proceeding to Brown Canyon in the early afternoon, when Madera Canyon clouded up and rain began to fall, I met with the other members of the group at the locked gate, which Bruce Walsh had opened for us at times originally agreed upon. Brown Canyon, if one wishes to look up the location, is about 22 miles north of Sasabe and west of Route 286. Virtually all of the canyon is privately managed by Fish and Game and is behind locked gates.

The afternoon of September 27, rain arrives at Madera Canyon, ending butterfly collecting.

There was no rain but it seemed to be turning colder as the afternoon progressed. Then as the evening arrived it was assuredly cooler than anticipated. Although I set eight ultraviolet bucket traps, it became apparent that the sheet collecting was going to be slim or non-existent due to the low temperatures. Therefore it became an early night.

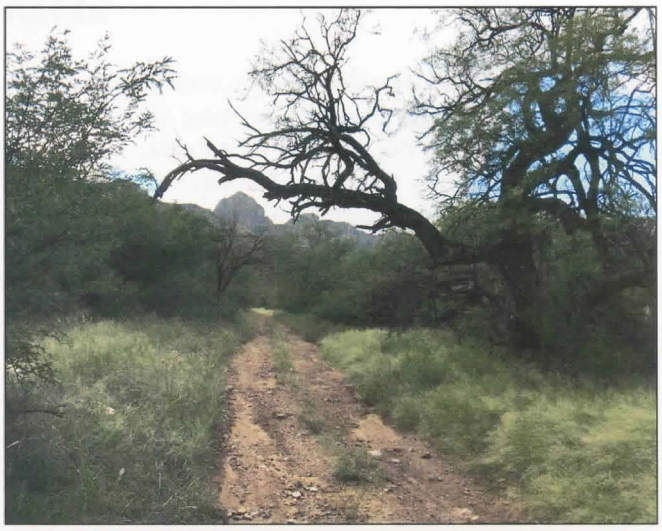
Fearing that the next morning would prove to be very cold, I arose with trepidation, to find that it was warming up fairly rapidly. Collecting the traps, I discovered that the night had resulted in somewhat reduced numbers of moths from what I had hoped. However, never having collected in the fall in southern Arizona before, I had no idea whether this was the norm or not. After sorting the bucket trap moths, Dave Marsden and I decided to hike up the canyon to seek out butterfly species, as we could see some yellow, some orange and some white butterflies starting to stir.

From the lodge in Brown Canyon it is about three quarters of a mile to where the two streambeds split and an overnight herder cabin sits, so this was the goal. Walking along the streambed, there were areas where surface water flowed, and areas where it went underground for short stretches, which is not uncommon in rocky Arizona streambeds in the desert mountain area. Wary for snakes, we went fairly slowly, so it took over an hour to hike the area, but it contained many species of fall flying butterflies.

The Fish and Game Lodge at Brown Canyon, Baboquivan Moutains.

In particular, the *Phoebis sennae marcellina* went winging by, rarely stopping for anything, and proving to be as difficult to catch as ever. More sedate were the numerous *Eurema niceppe* and *Eruema mexicanum* specimens, which proved to be very fresh, indicating a new generation from the summer. Many other butterflies were seen and several were caught as new species to me, such as *Heliopetes domicella* and *Calephelis arizonensis*, which cannot be appreciated fully until the underside is viewed, with silver markings among the orange areas. Even a fresh *Zerene cesonia* came to puddle in the tiny stream, which had some active water spots. A fuller list of the butterflies caught is attached.

Since the day proved to be much warmer than the day before, it looked promising for trapping and setting up sheets for moths in the evening. After another hike in the afternoon up the canyon (not as successful as the morning hike for butterflies) it was time to rest and get ready for trapping and sheet setup.



A great photo of the atmosphere entering Brown Canyon Road.

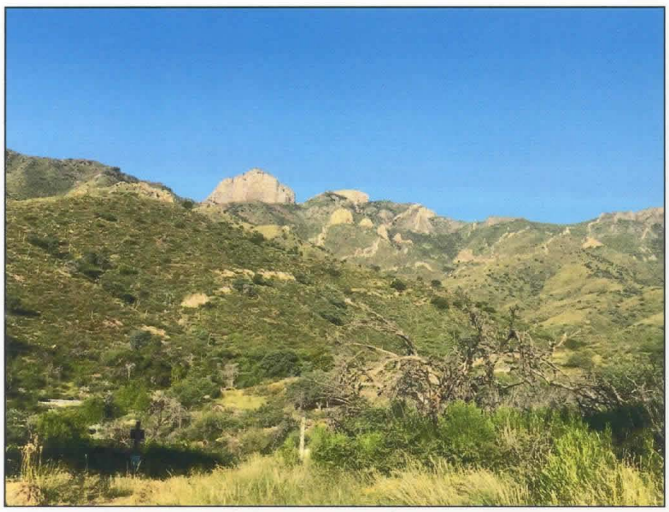
With four sheets and over a dozen traps set up for the night of September 28th, we as a group were ready. The moth collecting was significantly improved over the previously colder night, and this is usual for the area, as temperatures rise and fall in wider spreads.

After several hours at the sheets, it was time to let the traps take over, and Saturday proved to be as successful as could be.

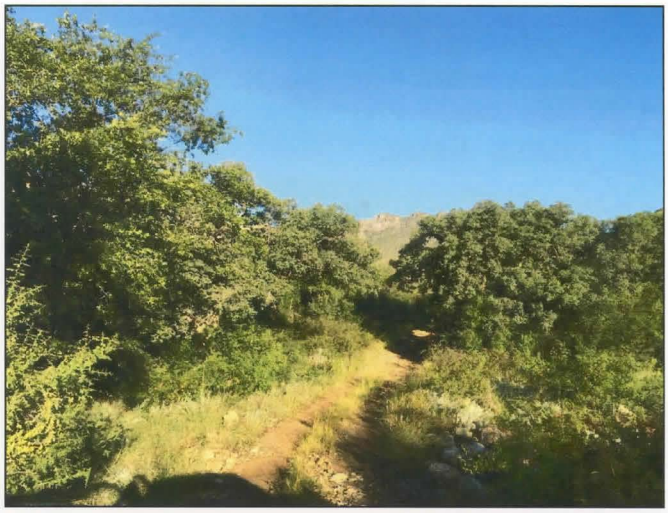
However, to add excitement to the trip, the toilets on the first floor of the lodge overflowed during the night, and sewage spread across the floor. Therefore all the emptying of the traps moved outdoors, and Bruce had to drive down to the road to phone a caretaker for repairs. There is no phone service at the lodge.

However, the collecting was great, and the species variation was excellent. I enclose a list of the identified species, but there are still many to identify.

Overall, it is always a phenomenon to me to visit Arizona, and to see that there are always, even after seven trips there, species of moths (and in this case butterflies) that I have never caught on previous trips. Nowhere else have I seen this to such an extent as Arizona, and it continues to be one of the incredibly premier locations to visit – whether the Chiricahua Range, the Baboquivari Range, Madera Canyon, Greer, Mount Graham, Patagonia, Pena Blanca, Box and Florida Canyon and the Huachuca Range! All are great with new things to discover, and new things are, in fact, still being found.



Baboquivari Peak, west of the lodge area.



The typical road and vegetation up to the lodge in Brown Canyon.

The following 5 photos are of moths collected on the field trip in southern Arizona. Genus species names, MONO numbers, number of butterflies/moths, and numbers of spread males and spread females are presented in the accompanying list:

Collecting trip to Arizona, September 27-28, 2019:

AZ Madera Canyon , September 27, 2019

MONA	Genus	Species	M spread	F spread
		BUTTERFLY		
4602.a	Gyrocheilus	patrobas tritonia	6	2

AZ Brown Canyon, September 27-28, 2019

MONA	Genus	Species	M spread	F spread
		BUTTERFLIES		
3957	Erynnis	funeralis	1	
3967	Pyrgus	albescens	1	
3970	Heliopetes	domicella		1
4088.a	Atrytonopsis	ovinia edwardsi	2	
4157	Battus	philenor philenor	3	
4178	Papilio	multicaudatus		1
4224	Zerene	cesonia	1	
4228.b	Phoebis	sennae marcellina	6	
4242	Eurema	niceppe	3	
4246	Eurema	mexicanum	8	
4357	Leptotes	marina	1	
4394	Calephelis	arizonensis	6	
4410.a	Libytheana	carimenta larvata	1	
4557.a	Asterocampa	celtis antonia	1	
4615.b	Danaus	gilippus strigosus	3	
4698.a	Parasa	chloris huachuca	1	
4895	Chalcoela	iphicalis	2	1

MONA	Genus	Species	M spread	F spread
		MICROS		
4698.a	Parasa	chloris huachuca	1	
4826.a	Mimoschinia	rufofascialis novalis	2	1
4827	Jativa	castanealis	1	
5974	Alberada	parabetes	2	
5993	Loxostege	albiceralis	1	
5130	Choristostigma	roseopennalis	5	
5454	Euchromius	ocellea	1	
5566	Arta	statalis	1	1
5585	Toripalpus	trabalis		1
5650	Decaturia	pectinalis		2
5698	Parasa	chloris	1	
6039	Coenochroa	californiella	6	1
6045	Peoria	opacella	2	

MONA	Genus	Species	M spread	F spread
		GEOMETRIDS		
6312	Macaria	deceptrix	8	1
6333.a	Psamatodes	everiata errata	3	
6381	Digrammia	colorata	2	2
6416	Rindgea	ballandrata	10	3
6417	Rindgea	hypaethrata	3	2
6420	Fernadella	fimetaria	1	
6425	Taeniogramma	tenebrosata	3	2
6455	Stenoporpia	pulchella	2	
6484	Tornos	erecetarius	2	
6494	Glaucina	baea	6	1
6508	Glaucina	ignavaria	11	6
6519	Synglochis	perumbraria		1
6520	Eubarnesia	ritaria bicoloraria	1	
6700.a	Chloraspilates	arizonaria	6	1
6706	Pterospoda	nigrescens	20	
6747	Pero	meskaria	1	
6749	Pero	radiosaria	3	
6845	Philtraea	elegantaria	22	1
6886	Besna	rubritincta	2	
6930	Eusarca	galbanaria	18	5
7015	Chlorosea	rosetacta		2
7054	Dichorda	consequaria	4	
7059	Synchlora	frondaria	7	1
7073	Chlorochlamys	appellaria	3	
7110	Idaea	basinta	1	
7128	Arcobara	multilineata	5	1
7130	Odontiptila	obrimo	6	4
7210	Antepirrhoe	semiatrata	2	
7295	Archirhoe	neomexicana	16	3
7309	Spargania	viridescens		2

MONA	Genus	Species	M spread	F spread
		SATURN/SPHINX		
7671	Tolype	austella	1	
7778	Manduca	rustica	1	

MONA	Genus	Species	M spread	F spread
		NOTODONTID/ARCTIID		
7955	Symmerista	zacualpana	5	1
7959	Dasylophia	seriata	1	
7960	Notela	jaliscana	2	
7971	Litodonta	aonides	1	
7991	Heterocampa	averna	1	
8015	Oligocentria	coloradensis	1	1
8066	Cisthene	tenuifascia	3	
8180	Apentesis	incorrupta	1	
8260	Ctenucha	venosa	10	

MONA	Genus	Species	M spread	F spread
	NOCTUIDS			
8535	Plusiodonta	amado	3	
8576	Azela	schausi	1	
8598	Melipotis	perpendicularis	10	
8600	Melipotis	indomita	2	1
8607	Melipotis	jucunda	1	
8608	Melipotis	agrotoides	1	
8613	Forbesia	cinis		1
8614	Bulia	deducta	3	2
8654	Lesmone	griseipennis	1	2
8673	Toxonprucha	repentis	1	
8675	Toxonprucha	clientis	2	
8677	Zaleops	umbrina	11	5
8680	Matigramma	rubosuffusa	3	3
8798.b	Catocala	negama euphemia	1	
9011	Tridupia	limbatus	1	
9014	Cobubatha	lixiva	3	1
9017	Cobubatha	orthozona	4	1
9018	Cobubatha	dividua	3	3
9085	Ponometia	semiflava	4	1
9090	Tarachidia	candefacta	2	
9102	Ponometia	fasciatella	1	
9130	Spragueia	obatra	5	1
9156	Tarache	axendra	1	
9161	Acontia	cretata	4	1
9164	Acontia	behrii	5	4
9175.2	Bagisara	averna	1	
9378.b	Apamea	burgessi ona	8	
9597	Hemibryomima	chryselectra	1	1
9695	Condica	albolabes	1	
9735	Heminocloa	mirabilis	8	5
9745	Plagiomimicus	dimidiata	2	
9755	Plagiomimicus	tepperi		1
9755.1	Plagiomimicus	mimica	3	2
9763	Chrysoecia	gladiola	3	1
9764	Chrysoecia	atrolinea	20	7
9767	Eulithosia	plesioglauca	2	1
9776	Chalcopasta	howardi	5	2
9785.1	Stiria	intermixta	6	6
9787.1	Stiria	satana		2
9805	Paramiana	periss		1
9817	Thurberiphaga	diffusa	10	1
9824	Hemioslaria	pima	11	6
10403	Lacinipolia	erecta	5	1
10415	Lacinipolia	strigicollis	2	
10420	Lacinipolia	consimilis	3	
10422.1	Lacinipolia	martini	2	
10552	Protorthodes	incincta	10	5
10560	Nuorthodes	texana	1	
10562	Protorthodes	mulina	1	
10573	Ulolonche	disticha	1	
11128.a	Schinia	arcigera ferricasta	1	
11180	Schinia	argentifascia	3	4
11193	Schinia	hulstia	1	

11197	Schinia	oculta	1	
11215	Grotella	sampita		1
	Total		449	124

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

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BELL'S SKIPPER AT KISATCHIE NATIONAL FOREST

BY

CRAIG W. MARKS

On June 22, 2019, the 13th annual Kisatchie National Forest/Natchitoches Parish NABA 4th of July Count took place. The day was hot and humid, but there was a breeze that helped alleviate some of the heat. The participants included numerous experienced butterfliers, Jean and Jeff Trahan, Rosemary Seidler, Vickie Lefever, Jonathan Clark and his dad, R.D. Clark, Brad Moon and Phillip Wallace.

Located in the piney hills and hardwood bottoms of a region of Louisiana known as "CenLa," the Kisatchie National Forest is the only national forest in the State. Spread across seven of the ten parishes that make up CenLa, it is divided into five managed units that are called Ranger Districts and which total over 604,000 acres of public lands. The Kisatchie Ranger District of Kisatchie National Forest is located in the hilly, pine-strewn regions of Nachitoches Parishes, north and west of Alexandria, LA. Some of the hills and mesas in the Kisatchie Ranger District qualify as steep and rocky, although none are more than 400 feet high.

Within that District is the Longleaf Vista Recreation Area, surrounded on three sides by the 8,700-acre Kisatchie Hills Wilderness. This day-use recreation area presents a wide variety of forest settings from meadows, to bottomland hardwoods, to high mesas, to creeks. The Wilderness Area has several extensive trails such as the Backbone Trail and the Caroline Dormon Trail. The Wilderness Area is primarily accessible via Forest Highway 59 (the Longleaf Trail Scenic Byway), a 17 mile drive thru the Wilderness Area that ends just short of the Kisatchie Bayou Recreation Complex.

Because of the wide diversity of species found in this particular Kisatchie Unit, Jeff Trahan and I thought it was a suitable location for a NABA Count. Over the years, we have been able to document 85 species during counts conducted in March, April, May, June, September and October. We have conducted the count in mid-June on several occasions because Kisatchie is one of two locations where Meske's Skippers (*Hesperia meskei*) have been found in LA (the other location is in the Vernon Unit of the National Forest, in Vernon Parish).

The Meske's Skipper's range is primarily across the southern U.S. with isolated colonies in central AR and east TX. The subspecies in the Big Pineywoods region of east TX is *H. m. meskei*. The habitat in Kisatchie NF is identical to that of east TX which is less than 50 miles away, and I believe the population in Kisatchie NF is an eastward extension of that subspecies. As I indicated, it is a rare skipper in LA, and it has been listed in 2015 as a Tier III, S1 ranked SGCN. Its larval host plants have been identified as little bluestem and arrowfeather three-awn.

Meske's Skippers are reported to have two broods, May to June and September to October, with the May-June brood typically more numerous. It is found mainly in dry, sandhill pinelands and is well adapted to fire-managed habitats like Kisatchie. During the 2010 KISNF Count, also in mid-June, a record was set for the most Meske's Skippers tallied during a NABA count, 42. On June 20, 2013, Trahan reported 140 in that Unit along the Longleaf Vista Road at patches of mountain mint and a yellow tickseed species. As we had not done this count in June between 2010 until 2018 and had only seen one in 2018, we set the 2019 count again in mid-June to see if 2018 had simply been a bad year or reflected a downward trend.

Actually, the first species seen that morning, by Brad Moon (remember that name, he will pop up again), was not a butterfly, but a dragonfly, the Texas Emerald (*Somatochlora margarita*). Now, I know this was a butterfly count, but the participants also count/document other things including birds, dragonflies, damselflies and robber flies. Brad and Phillip are our resident dragonfly experts.

Texas Emerald female, June 22, 2019, photo by B. Moon

The Texas Emerald Dragonfly has an extremely limited range, restricted primarily to a handful of locations in the long-leaf and loblolly pine forests of southeastern TX and western LA. It was first reported in LA in 1996. Brad explained that it typically flies in the early morning and late evening to dusk, flying primarily at tree top level, along dirt roads. Females may occasionally come down into open fields or forest clearings to feed. The species was petitioned for federal listing under the U.S. Endangered Species Act in 2011 and in 2016 underwent a 12-month review by the U.S. Fish and Wildlife. So, everyone was excited about seeing something so unusual right out of the gate. Thanks to Brad, more excitement was to come.

Butterfly-wise, the day actually started slowly. We split up into four groups to maximize our coverage of the count circle. Jeff and I moved off to walk some areas that had, in the past, been productive, but, for the most part, the butterflies were few and far between. We met for lunch at one of the more unique areas at Kisatchie, the Middle Branch Bog.

This particular bog is a hillside pitcher planter bog in the middle of Kisatchie's piney woods. The bog is even more unique due to the presence of a continuously flowing freshwater spring that has been piped to allow people to collect the freshwater. The sandy upper soil allows underground water to flow down the hill, through the bog. Below the sand layer is a water-tight clay soil layer that functions to retain that water. Over 150 plant species have been found in this 3.5 acre bog. One of the dominant plants is the yellow pitcher plant, *Sarracenia alata* (see picture below). Also present in and around the bog are several species of grasses, including panic grasses and bluestems (*Dichanthelium sp., Panicum sp.*, and *Schizachyrium*) and sedges (*Rhynchospora sp.* and *Scleria sp.*). Along the drainage at the base of the bog, there is a small creek that flows away from that bog with numerous species of woody shrubs along its banks, including Sweetleaf, *Symplocus tinctoria*.

Pitcher plants in Middle Branch Bog, June 22, 2019, by J. Clark

Sweetleaf is a shrub or small tree with a short trunk, up to 20 feet tall. It ranges from southern Delaware to central Florida and west to east Texas, remaining evergreen southward. The leaves have a sweet taste to livestock, thus the other common name, "horse sugar." Its habitat is reported as moist soils in the understory of

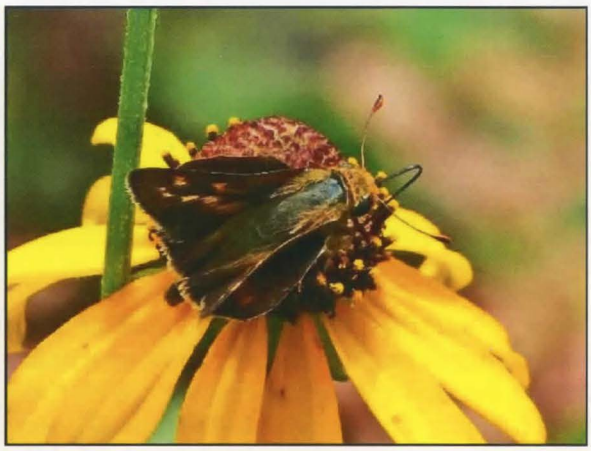
hardwood forests. Cech and Tudor describe it as a small, understory tree that grows along forest and stream edges, a component of the "shrub layer." I comment on this shrub because it is the larval foodplant of the King's Hairstreak (*Satyrium kingi*).

The King's Hairstreak has a limited distribution in the southeastern states from the Atlantic Coastal Plain from Maryland south and the gulf states to east Texas and southern Arkansas, chiefly in lowlands. Noting that it was not described until 1952, Pyle described it as "vaguely unknown," and as local in deciduous woods. Legrand suggested (and I agree) that to find it one should look where sweetleaf is common, but he then cautioned that such a search will generally fail as it is quite colonial. He noted that relatively few flowers are in bloom when this butterfly is on the wing. Its preferred habitat is pocosin (baygall) ecotones, especially where longleaf pine forests meet pocosins, although it can also be present in swamp/bottomland margins but, again, always near sweetleaf.

During the lunch break, while the others were eating, I walked down to the base of the bog where there was a good amount of sweetleaf growing. After flushing a couple of Ebony Jewelwings (*Calopteryx maculate*), the first butterfly I saw was a male King's, the first for the day, but not the first over the history of this count. Jeff and I ended up seeing five throughout the day. The second was in a low area of the forest where we often find Southern Pearly-eyes (*Enodia portlandia*) and Gemmed Satyrs (*Cyllopsis gemma*). The other three were along the Caroline Dorman trail in an area where they had been seen in the past. Five is the most we have ever seen on this count.

Kings' Hairstreak, June 22, 2019, by J. Trahan

Due to the presence of bluestem grass at the Middle Branch Bog, that area was the first, and remains the most consistent, area where we have found Meske's Skippers. After finding the first King's Hairstreak, I returned to the spot where everyone was parked, and Brad Moon (I told you that his name would come up again) had found a male Meske's that was being very cooperative for pictures (see below). Jonathan Clark had reported seeing five before lunch along Red Bluff Road, a new location within the Unit for Meske's Skippers. The group ended up seeing 15 Meske's Skippers, the second most recorded on one of our official counts.



Meske's Skipper male, June 22, 2019, by J. Trahan

As we were admiring that Meske's Skipper, Brad advised that he had also seen a Dusky Roadside Skipper (*Amblyscirtes alternata*) a bit further up the road and just a few minutes before finding the Meske's Skipper. This is possibly the smallest roadside skipper of the five found in LA. The males patrol with a flight that is swift and hard to follow, but it readily comes to flowers to nectar at which time it can be closely observed. In the past, I have, during mid-June, found it perched on the same yellow flowers as Meske's Skippers in the roadside ditches around the Middle Branch Bog. This particular roadside skipper is never seen in great numbers, and was listed in 2015 as a Tier II, S2S3 ranked SGCN in LA. It seems to be somewhat more common during the spring brood in April. There appears to be a third brood in the fall.

Dusky Roadside Skipper, June 22, 2019, by B. Moon

While Brad did see an actual Dusky Roadside Skipper later in the day (see picture above), the skipper he saw in the area of the Middle Branch Bog was not one. It was not until Jeff Trahan got home and began to review his pictures, and, specifically, the pictures he took of Brad's suspected Dusky that he realized this skipper was something else. He sent me his picture, and I immediately agreed it was not a Dusky Roadside Skipper. My suspicion was that the specimen in the picture was the first recorded Bell's Roadside Skipper (*Amblyscirtes belli*) in LA.

Bell's Roadside Skipper, June 22, 2019, by J. Trahan

In my book, Butterflies of Louisiana, one of the butterflies I predicted might eventually show up within this State was the Bell's Roadside Skipper. With two flights from March to September, this roadside skipper is uncommon to common throughout most of AR excluding the southern Delta (southeastern) region. It also has previously been reported in extreme southeastern OK and at several locations in the Pineywoods Region of east TX along the northwestern LA border. Based on these sightings, I felt it might be found along the northern LA borders with those states.

I am familiar with this roadside skipper, having found it a few times in southwestern AR at Stone Road Glade Preserve and R. Evans/Grandview Prairie WMA in late March and again in June. At those locations, it flew in moist woods, near a small creek with multiple kinds of grasses growing in the understory. It is typically seen at wild garlic when not basking in slivers of sunlight on low growing plants in the understory.

Unlike Pepper and Salt Skippers, it does not assume a "jet fighter" or spread-winged position when perched; rather, holds its wings straight over its back like a sulphur. This skipper's preferred habitat is hardwood forest bordering rivers and streams where its host plant, Inland Sea Oats, grows along the bank. River Oats have also been identified as a host plant in Tennessee. Its first brood appears in the spring, flying into August, and there may be as many as three broods in the southern portion of its range.

I asked everyone in the group who had photographed the skipper to send me their photographs. Jeff and I then sent several photographs to acquaintenaces we knew would be more familiar with that species. Brad also submitted his photo to BAMONA (see below). Although not unanimous, the majority opinion was that Brad had found a Bell's Roadside Skipper.

Bells' Roaside skipper, June 22, 2019, by B. Moon (recorded as BAMONA sighting #1211756)

Bell's Roadside Skipper (below) and Swarthy Skipper (*Nastra lherminier*)(above), June 22, 2019, by J. Trahan

As the picture on the previous page (right bottom) reflects, it turned out that Jeff also saw and photographed a second Bell's at about the same time and in the same area as the first. As indicated above, while I thought this species was a good candidate to be found in LA, I also thought it would be found in north LA, along the AR-LA border. According to the BAMONA website, the closest confirmed sighting is in northeast TX, south of Tyler. As with the Meske's Skipper, my suspicion is that the Bell's Roadside Skippers in Kisatchie are an eastern extension of the east TX population and not of the population found in southwestern AR.

Our group ended up seeing 37 species and 420 individual specimens. Both numbers are in the upper average range for this count, and certainly much higher than the morning numbers had portended. Throw in 15 Meske's Skippers, 5 King's Hairstreaks, a Dusky Roadside Skipper and a new state record represented by two Bell's Roadside Skippers, and this count might qualify as one of the best in which I've ever participated.

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US Forest Service, www.fs.fed.us/wildflowers/regions/ southern/MiddleBranchBog.index.shtml

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

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Wanted: Part 1 (Satyriinae), Part 2 (Heliconiinae and Danainae), and Part 3 (Nymphalinae) of **The Butterflies of Colorado** by Michael S. Fisher (C. P. Gillette Museum Series). Will purchase entire Series (Parts 1-6) if necessary. Contact David C. Iftner at (217) 730-7500 or iftner@casscomm.com.

SUCCESS ! — PHOTO AND CAPTURE OF *MEGATHYMUS URSUS VIOLAE* IN THE "CHRISTMAS MOUNTAINS OASIS", TEXAS

BY

BILL DEMPWOLF

After three decades away from butterflies I again got hooked on the hobby in 2005 when I collected some specimens from central Texas to send to my father who lived in Ohio at the time. I collected to cheer him up and to provide specimens from a location exotic to him. While my objective was to gift my father, I think I actually gained more than he did. In the process I acquired a new passion that has provided hours of enjoyment and education over the past fifteen years. While my favorite butterfly family is skippers, my father preferred hairstreaks. Among the skippers my passion burns most brightly for Giant-Skippers.

The first Giant-Skippers I collected were adults on a fall trip to Arizona in 2010. While there I was thrilled to be able to start my Giant-Skipper collection by locating the relatively common *Agathymus aryxna* and *Agathymus polingi*.

This past winter as I enjoyed studying my Giant-Skippers I began to think about how many species and subspecies I have been fortunate enough to collect yet have never seen as adults on the wing. I resolved to try to see an adult on the wing for each butterfly species I collect. (I discouraged myself from attempting to see every subspecies on the wing as being too difficult a task).

Years ago, I was fortunate to be able to collect *Megathymus ursus* immatures during an October visit to Arizona. The seven young caterpillars lived in and ate in potted yucca roots in my living room for five months, thanks to a very understanding wife. I ended up with two pairs.

I had been searching in vain for *ursus* immatures in Texas for quite some time, checking thousands of yucca plants with no success. I despaired of ever finding an immature in Texas, let alone successfully viewing an adult on the wing. Then in 2018 in an email exchange with Brian Banker he mentioned that the most "sure-fire" location to see an adult *ursus* on the wing was on top of a mountain near "Christmas Mountains Oasis" (CMO).

CMO, owned by Carolyn Ohl-Johnson, is located in the Christmas Mountains approximately 15 miles north/northeast of Terlingua, Texas, adjacent to Big Bend National Park. She has been improving her property in the Chihuahuan Desert to attract wildlife since 1977, and has created an oasis in the Christmas Mountains. You can read more about it on Carolyn's blog https://cmoasis.blogspot.com/

I had visited Carolyn's property in 2011, at the height of a record drought. Even in that difficult year, the oasis had healthy plants for the birds and butterflies. Although I am not a birder, I enjoyed seeing Lucifer Hummingbirds, which her place is noted for. I contacted Carolyn and asked if it would be possible to visit again and hike up her mountain to see an adult *ursus*. She graciously agreed.

Knowing adult male *ursus* hilltop in the morning, I arrived at CMO early on May 5, 2019. Carolyn met me at the property and led me to the trailhead. Because the trail, built by Carolyn, was crude and damaged by occasional monsoonal rains, it was difficult to follow in some places. So she hiked about half way up the mountain to make sure I could find the way. And it was not easy. I cannot begin to imagine the work that went into building the trail, especially considering Carolyn was in her mid-seventies when she carved it into the mountain's steep slopes. When we got to about the half way point Carolyn pointed out the rest of the way up to the top of the mesa. I was faced with many switchbacks, most of which were no longer well defined. It was at that point I realized I had forgotten my camera. I should have checked my backpack much earlier! Carolyn kindly loaned me her camera, and I proceeded up the mountain.

The rest of the climb involved following the trail until it ended, then bush-whacking up the side of the mountain to the summit. Fortunately, my goal, a sort of mesa area at the top, was in plain view. And it was easy to stay oriented – I could see my car far below parked at the trailhead.

Huffing and puffing as I kept an eye out for snakes, I labored to the summit. After a total of about 45 minutes of hiking, I achieved my goal. What a glorious view! And as a surprise bonus I even had cell phone reception at the top.

After resting and getting my breathing back under control, I oriented myself. It appeared the best place to start would be along the southeast edge of the mesa, where I thought a hill-topping *ursus* might fly. As

View from mesa where *M. ursus* were seen. Car barely visible.

I slowly walked along the edge of the mesa, I carefully surveyed for butterfly activity. After about twenty minutes a male *Megathymus ursus* arose up off the ground about ten feet from me. My heart raced as he flew in a circle around me at a distance of about fifteen feet – a full 360 degree circuit, then, in the blink of an eye he disappeared. Having the opportunity to see an *ursus* in flight, close enough for good detail, was incredible! Even with no photos and no specimens, I already felt the trip was a success.

I continued to make my way along the edge of the mesa, methodically examining the ground around me. About ten minutes later I spied an *ursus* sitting on a rock in the jet plane position. Even as I enjoyed this sight, I was caught on the horns of a dilemma. Should I get a photo and risk missing the opportunity to collect the specimen, or should I quickly collect the specimen? Although torn, I felt obliged to get a photo to share with Carolyn. I carefully set my net on the ground and contemplated the situation. Then I cautiously inched a bit closer and snapped a quick photo. Unfortunately, there was grass between the *ursus* and me. So I moved a couple feet to my left for a different angle and took a second photo. Although there was still grass between us, I dared not wait any longer. I slowly picked up my net and collected the specimen. Success!

It was my first sighting of an adult Ursine Giant-Skipper and my first specimen of *Megathymus ursus violae*! Shaking from excitement, I sat down to collect myself and savor the moment. With my cell phone I took a photo of my prize and texted it to several friends, delightedly sharing the news. After a short rest, I continued exploring for about another hour. I was pleased to note *Chlosyne fulvia* flying about the mesa. I saw perhaps half a dozen males hill-topping. I had seen my first ever *fulvia* only a couple days before, so it was still a special treat.

Male *Megathymus ursus* photographed May 5, 2019, at Christmas Mountains Oasis.

The hike down the mountain was not quite as strenuous as the hike uphill, but with loose rocks and a steep incline, it was imperative to descend slowly and

carefully. By the time I got to the car, its air conditioning on the drive back to the oasis was most welcome.

Back at the oasis I spent another hour exploring. I saw several *Hesperopsis alpheus* flying around their host plant. I also checked dozens of lechuguilla plants looking for signs of *Agathymus mariae*. No sign of *mariae* activity was seen, neither current activity, nor trap doors from previous years. There were lots of flowers blooming in the arroyos with numerous common butterflies nectaring. While the number of species that morning was not huge, perhaps 20 of the 97 species recorded at CMO, being able to enjoy Ursine Giant Skipper, Fulvia Checkerspot, and Saltbush Sootywing all in one morning was truly memorable.

As I write this article, I have collected five species of *Agathymus* (*polingi, aryxna, neumoegeni, estelleae* and *mariae*) and have seen three on wing. I have not seen *neumoegeni* nor *mariae* on wing yet. Three species of *Megathymus* (*yuccae, streckeri* and *ursus*) I have now seen on wing. I am confident appropriately timed trips to the right locations will enable me to see adult *neumoegeni* and *mariae*. Other than Giant- Skippers, the only species I've collected as immatures, but have not yet seen adults flying, is *Cogia outis*. Based on Bryan Reynolds' interesting article in the September 2019 issue of the Southern Lepiodopterists' News. I suspect a trip to Oklahoma is in my future.

(Bill Dempwolf, E-Mail: bdempwolf @austin.rr.com)

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PHOTOS OF BUTTERFLY AND MOTH LISTED IN THE STATE REPORT OF GEORGIA

BY

JAMES K. ADAMS

***Erynnis funeralis*, likely STATE record, Harris Neck NWR, boat landing at Barbour River, McIntosh Co., Oct. 14, 2019 (Record of Nancy Crosby)**

***Schinia fulleri*, North Section of Townsend WMA, Long Co., 8 mi. SE of Ludowici, Sept. 21-22, 2019**

REPORTS OF STATE COORDINATORS

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

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

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Florida report by Charles V. Covell Jr.:
all vic. Gainesville, Alachua Co., Aug. 1 – Nov. 30, 2019.

Epargyreus clarus, Aug. 26
Urbanus proteus, Aug. 15, 21, 22, 26, 27, 28, 29, 30, Sept. 3, 6, 9, 12, 17, 18, 25, 26, 27, 30, Oct. 3, 16, 22, 28
Urbanus dorantes, Aug. 9, 29, Nov. 7
Erynnis horatius, Aug. 30
Hylephila phyleus, Aug. 13, 21, 24, Sept. 7, 21, 28, Oct. 1, 5, 12, 22, 31, Nov. 19, 23. 26
Lerema accius, Sept. 26
Panoquina ocola, Aug. 7, 20, 26, Sept. 9, 30, Oct. 11, 15
Ancyloxipha numitor, Oct. 12
Battus polydamas, Aug. 7, 13, 29, Sept. 9, 18, 27, Oct, 3, 7, 15
Papilio troilus, Aug. 2, 6, 8, 20, 21, 22, 24, 26, 28, 29, 30, 31, Sept. 3, 9, 12, 30, Oct. 5, 22
Papilio palamedes, Aug. 30
Heraclides cresphontes, Aug. 2, 20, 21, 26, 28, 29, 30, Sept. 6, 17, Oct. 7, 26, Nov. 21. 22
Phoebis sennae, Aug. 2, 6, 9, 10, 13, 20, 21, 22, 24, 26, 27, 28, 29, 31, Sept. 3, 7, 9, 10, 11, 12, 17, 28, 30, Oct. 1, 5, 12, 15, 20, 22, 31, Nov. 1, 12, 23
Phoebis philea, Oct. 31
Phoebus agarithe, Sept. 17, Oct. 22
Abaeis nicippe, Aug. 2, 10, 28, 31
Pyrisitia lisa, Oct. 1, 31, Nov. 7
Anartia jatrophae, Oct. 12
Limenitis archippus, Aug. 2, 6, 10, Oct. 5
Leptotes cassius, Oct. 2, 20
Vanessa cardui, Oct. 7, 15
Vanessa atalanta, Oct. 20, Nov. 14, 30
Junonia coenia, Oct. 5, 12, 22, Nov. 23
Agraulis vanillae, Aug. 2, 6, 9, 10, 13, 20, 21, 22, 26, 27, 28, 29, 30, 31, Sept. 3, 6, 7, 9, 11, 28, Oct. 1, 3, 5, 12, 15, 22, 31, Nov. 30
Heliconius charithonia, Aug. 4, 10, 13, 20, 21, 22, 24, 26, 27, 28, 29, 30, 31, Sept. 3, 6, 12, 17, 18, 25, 27, 30, Oct. 2, 7, 16, 22, 26, 28, 31, Nov. 7, 20, 22, 28
Asterocampa celtis, Aug. 31, Sept. 21
Asterocampa clyton, Aug. 10
Danaus plexippus, Aug. 7, 9, 10, 13, 15, 20, 21, 22, 26, 28, 29, Sept. 25, Oct. 3, 7, 12, 16, 21, 22, 28, 31, Nov. 14, 15, 19, 26, 28

These were all sight records by me, mostly at home (207 NE 9th Ave.,), Gainesville Country Club, or behind the McGuire Center, Florida Museum of Natural History. I began noticing an increase in butterflies in midsummer which continued into the fall. *P. troilus, H. cresphontes* and *D. plexippus* seemed more abundant than usual. *P. sennae, A. vanillae* and *H. charithonia* remained the generally most abundant butterflies in the areas sampled. No species were new to my 15-year survey. A field trip or two would have produced many more species, I'm sure! —

Charlie

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

James sends in the following report:

The contributors include James Adams (JKA or no notation), Brian Scholtens (BS), John Hyatt (JH) and Lance Durden (LD). Others are indicated with their records. Most records presented here represent new or interesting records (range extensions, unusual dates, uncommon species, county records, etc.), or more complete lists for new locations/new times of year. All known new STATE and COUNTY records are indicated, and all dates listed below are 2019 unless otherwise specified.

Menlo, Chattooga County, Sept. 17, 2019, Dustin King:
SPHINGIDAE: *Lintneria eremitus* (larva; COUNTY, second record from the STATE).

Rocky Face ridgeline, just W of Dalton at crest of Dug Gap Battle Rd., Whitfield Co:
Sept. 3-4:
CRAMBIDAE: *Diaphania costata*. **EREBIDAE:** *Utetheisa ornatrix, Catocala nebulosa*. **NOCTUIDAE:** *Stiria rugifrons, Plagiomimicus pityochromus, Schinia nundina, Papaipema polymniae, P. nebris, Magusa divaricata.*
Sept. 28-29:
EREBIDAE: *Selenisa sueroides, Catocala robinsoni* ("missouriensis"). **NOCTUIDAE:** *Amyna bullula, Papaipema marginidens, Dypterygia patina.*
Oct. 20-21:
CRAMBIDAE: *Diaphania hyalinata*. **NOCTUIDAE:** *Papaipema marginidens, P. cataphracta.*

Calhoun, Gordon Co., Sunset Hills subdivision (home of JKA), Oct. 27:
LYCAENIDAE: *Parhassius m-album* (LATE).

Athens, Clarke Co., 275 Blue Heron Dr., 33.8882 N, 83.2973 W, John Pickering:
TORTRICIDAE: *Olethreutes malana* (possible STATE), June 26, 2018. **NOCTUIDAE:** *Cucullia alfarata*, Aug. 22, 2014 and Sept. 23, 2018 (COUNTY); *Acrapex relicta*, June 11, 2018 (COUNTY, third location known in STATE); *Lithophane* nr. *disposita*, Feb. 4, 2018 and Oct. 10, 2018 (COUNTY); *L. disposita*, Jan. 1, 2019 (COUNTY, third in STATE); *L. laceyi*, Feb. 16, 2018 (COUNTY, third in STATE); *L. lemmeri*, Feb. 2, 2014, Dec. 12, 2015, Jan. 17 and Feb. 2, 2018, and Jan. 17, 2019 (COUNTY); *Rusicada privata*, Aug. 29, 2019 (COUNTY, second in STATE).

Fall Line Sandhills WMA, western section, Taylor Co.:
August 29-Sept. 1, with LD, Denny Currutt and Leroy Koehn:
PSYCHIDAE: *Prochalia pygmaea, Basicladus tracyi*. **GLYPHIPTERIGIDAE:** *Drymoana blanchardi* (COUNTY). **LIMACODIDAE**: *Heterogenea shurtleffi, Euclea nanina*. **TORTRICIDAE:** *Sparganothis mcguinnessi* (40+ specimens), *Zomaria rosaochreana* (COUNTY, significant inland extension). **CRAMBIDAE:** *Lineodes integra*. **GEOMETRIDAE:** *Glena plumosaria, Ennomos magnaria* (EARLY). **SATURNIIDAE:** *Anisota consularis*. **LASIOCAMPIDAE:** *Heteropacha rileyana* (COUNTY). **SPHINGIDAE:** *Agrius cingulatus, Manduca rustica*. **NOTODONTIDAE:** *Hyparpax aurora* (see photo on page 350), *Heterocampa varia*, New genus/new species (to be described in the second MONA notodontid fascicle). **EREBIDAE:** *Apantesis figurata, A. placentia, Pygarctia abdominalis, Idia gopheri, Sigela eoides, Gondysia smithii, Catocala lacrymosa, C. ulalume, Pseudanthracia coracias*. **NOCTUIDAE:** *Argyrogramma verruca, Pyrrhia aurantiago, Schinia meskeana, S. arefacta, S. nundina, S. sordida, S. trifascia, S. lynx, S. saturata, Emarginea percara, Dypterygia patina, Mesapamea fractilinea, Spodoptera latifascia* (see photo on page 350), *Dargida rubripennis*.
October 3-6, with LD and Giff Beaton:
HESPERIIDAE: *Problema byssus* (COUNTY)(see photo on page 334). **TORTRICIDAE:** *Sparagnothis mcguinnessi* (fourth time [May, August, September] this year), *S. niteolinea* (second time this year [September], likely more), *Pelochrista quinquemaculana* (COUNTY), *P. adamantana*. **CRAMBIDAE:** *Condylorrhiza vestigialis* (COUNTY), *Parapoynx seminealis* (COUNTY, inland extension), *Thaumatopsis edonis* (COUNTY), *T. pexellus* (COUNTY, possible STATE). **GEOMETRIDAE:** *Leptostales laevitaria* (COUNTY, northward extension). **EREBIDAE:** *Apantesis parthenice, A. phyllira, A. placentia, Idia gopheri, Dyspyralis*, sp. nov., *Simplicia cornicalis* (COUNTY, northern extension), *Hypena degesalis* (COUNTY, inland extension), *Selenisa sueroides, Hypocala andremona, Epidromia rotundata* (COUNTY, northern extension). **NOCTUIDAE:** *Heliocheilus lupatus* (COUNTY), *Pyrrhia aurantiago, Schinia spinosae* (COUNTY, second in STATE), *Sideridis ruisa, Phlogophora periculosa, Dypterygia patina, Proxenus miranda, Protorthodes oviduca, Lacinipolia erecta* (many, COUNTY, third+ specimens from state), *L. meditata*.
Nov. 22-24, with LD and BS:
GEOMETRIDAE: *Scopula lautaria* (LATE), **NOCTUIDAE:** *Epiglaea apiata* (COUNTY, third in STATE), *Chaetaglaea tremula* (COUNTY), *C. rhonda*.

Alligator Creek WMA, Wheeler Co., late September, Giff Beaton:
LYCAENIDAE: *Hemiargus ceraunus* (COUNTY, see photo on page 334).

Griffin Ridge WMA, Long Co., 5 mi. SW of Ludowici, Sept. 20-21:
GEOMETRIDAE: *Scopula timandrata, Mellila xanthometata.* **MIMALLONIDAE:** *Cicinnus melsheimeri.* **SATURNIIDAE:** *Eacles imperialis, Actias luna.* **EREBIDAE:** *Abablemma brimleyana, Gabara* sp., *Pseudanthracia coracias.* **NOLIDAE:** *Meganola phylla, M. spodia, Diphthera festiva.* **NOCTUIDAE:** *Harrisimemna trisignata, Cucullia alfarata* (COUNTY), *Callopistria floridensis, Schinia scissoides* (COUNTY), *S. saturata, S. fulleri* (COUNTY), *S. sanguinea* (COUNTY).

North Section of Townsend WMA, Long Co., 8 mi. SE of Ludowici, Sept. 21-22, with Jeff Slotten (many of these records will be COUNTY records denoted by "C"):
HESPERIIDAE: *Nastra lheminier* (C). **PIERIDAE:** *Zerene caesonia* (C). **LYCAENIDAE:** *Hemiargus ceraunus* (C). **RIODINIDAE:** *Calephelis virginiensis.* **MIMALLONIDAE:** *Cicinnus melsheimeri.* **GEOMETRIDAE:** *Idaea violacearia, I. ostentaria* (C, second in STATE), *Lobocleta peralbata.* **LASIOCAMPIDAE:** *Tolype minta.* **SATURNIIDAE:** *Dryocampa rubicunda, Antheraea polyphemus, Actias luna.* **SPHINGIDAE**: *Agrius cingulatus*, *Paratrea plebeja.* **NOTODONTIDAE:** *Hyparpax aurora* (C, getting pretty LATE). **EREBIDAE:** *Idia gopheri* (C), *Zanclognatha laevigata, Cutina albopunctella, Lesmone hinna, Catocala carissima* (C), *Zale squamularis* ©. **NOCTUIDAE:** *Harrisimemna trisignata* (C), *Condica concise* (C), *C. sutor, Schinia petulans* (C), *S. turberculum, S. scissoides, S. saturata, S. fulleri* (see photo on page 366), *S. sanguinea.*

Townsend WMA, north section, along Cox Rd., 4.5 miles SW of Townsend, McIntosh Co., May 11, Nancy Crosby:
NYMPHALIDAE: *Neonympha areolatus*, "hundreds".

Priester Road, Shellman Bluff, McIntosh Co., GA June 8, Nancy Crosby:
RIODINIDAE: *Calephelis virginiensis.*

Shelman Bluff Road, at junction with Pine Harbor road, 100 yards from U.S. 17, McIntosh Co., GA, Nancy Crosby:
HESPERIIDAE: *Problema byssus*, May 19 and 22 (see photo on page 334).

Harris Neck NWR, boat landing at Barbour River, McIntosh Co., Oct. 14, Nancy Crosby:
HESPERIIDAE: *Erynnis funeralis*, likely STATE record (see photo on page 366).

Sapelo Island, McIntosh Co., Oct. 21, JH:
CRAMBIDAE: *Diasemiodes jansassialis* (new for island). **EREBIDAE:** *Cosmosoma myrodora, Palpidia pallidior, Ephyrodes cacata* (second for island and STATE), *Selenisa sueroides.* **NOCTUIDAE:** *Condica concisa, Agrotis vetusta, Feltia floridensis* (many), *Schinia tuberculum.*

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

Ricky sends in the following report: 24 June 1986 and 24 April 1987, Point Clear Island, Hancock county, collected by Paul Lago, *Automeris louisiana*, specimens in Mississippi Entomological Museum.

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

Harry sends in the following Fall Butterfly Records for North Carolina:

Records are from September through mid-November 2019. Names in parentheses are counties.

Fall 2019 was somewhat dry overall, with numerous good days for butterflying. September was about normal in temperature, but October was one of the warmer/hottest on record, another boon for watching butterflies. However, November was cooler than normal, with some butterflies hanging on until around the 10th, and then the Arctic Express with record cold mostly ended the butterflying a day or two later. *Vanessa cardui* numbers continued to increase into fall, with a few low double-digit counts. *Danaus plexippus* had a good fall flight this year, after a few bland autumns. Even *Danaus gilippus* had a good "flight" on the southern coast, reported from

several sites instead of the single site in most falls. However, Deep South strays were very scarce, and stopped in SC but essentially could not be found in NC. At least, the state got its third state record, and first for the Piedmont, for *Erynnis funeralis*.

PAPILIONIDAE:

Papilio cresphontes, Dwayne Martin photographed one at Riverbend Park (Catawba) (**COUNTY**) on September 24; the species is likely a migrant in that western Piedmont area.

PIERIDAE:

Colias philodice, though numerous in the mountains and less so in the northwestern Piedmont, the species has mostly disappeared from the eastern Piedmont and Coastal Plain. Thankfully, there were several excellent photos this fall from these regions. Jeff Pippen photographed several on his walks in Duke Forest (Orange and Durham), and most significant was one in the Coastal Plain photographed by Rob Van Epps in the Sandhills Game Land (Richmond) on October 10.

LYCAENIDAE:

Parrhasius m-album, this uncommon species was encountered a few times, with two found by Gail Lankford and party near Hot Springs (Madison) on September 20 being the only record of multiple individuals.

RIODINIDAE:

Calephelis virginiensis, the most notable record of the season was of two seen by Hunter Phillips at Stones Creek Game Land (Onslow) on October 2.

NYMPHALIDAE:

Agraulis vanillae, this was a reasonably good fall season for this species across most of the state. The best counts were made at Baldhead Island (Brunswick), where Susan Andrews had several counts over 200 individuals, peaking at 211 on October 6.

Speyeria diana, Pete Dixon had a count of 14 males in June, and he again had a count of 14, all females this time, in the Hot Springs area (Madison) on September 1. This is one of the state's best counts of the species. Though not quite record late, a female seen by Owen McConnell along the Cherohala Skyway (Graham) on October 3 was a very late record.

Boloria bellona, one seen by Sven Halling along the Blue Ridge Parkway (Watauga) was rather late on October 25.

Phyciodes phaon, though the species has had a moderate colony at Cape Hatteras Point (Dare), near the northern edge of the range, several hurricanes and other storm events have taken place in recent years such that its recent status was poorly known. Thankfully, the species is rebounding nicely – Harry LeGrand counted 16 there on September 1, and Mike Turner had an outstanding count of 85 (at two locales there) on September 21.

Danaus plexippus, the species had one of its better fall flights in recent years. There were several counts of well over 100 individuals locally, with the best count being 804 tallied by Merrill Lynch flying over his yard in northern Watauga County on October 1.

Danaus gilippus, John Taggart had several additional sightings this fall at Fort Fisher (New Hanover), where a resident population usually appears in summer and fall; his peak count was five on September 20. Susan Andrews had numerous sightings at nearby Baldhead Island (Brunswick), a county where observations have been surprisingly few in recent years. She had a peak tally of six on October 1, plus a quite late two individuals on November 12.

HESPERIIDAE:

Staphylus hayhurstii, the only fall record for the entire state was of one photographed by Mike Turner at Horizons Park (Forsyth) on September 7.

Erynnis funeralis, the most exciting record of the season was a male that was photographed by Susie Moffat in her yard in Chatham (**COUNTY**) on October 3. This is the state's first record of a male, the first for the Piedmont, and just the third for the state.

Burnsius oileus, Bob Cavanaugh collected an individual of this stray on September 7 in Croatan National Forest (Carteret) (**COUNTY**); the previous few state records are for the southern coast (Brunswick and New Hanover), plus an old one from the mountains (Buncombe).

Hesperia leonardus, again the only record came from the mountains, and again it was from Pete Dixon in Madison County, where he photographed one on September 8. Both this species and *Hesperia metea* are still being seen in the mountains, but the formerly wide Piedmont ranges are shrinking or disappearing, for unknown reasons. To make things worse, butterfliers seeking these two species have failed so often in the Piedmont in the past few years that most have given up searching powerline clearings and other potential habitats (with native grasses).

Hesperia attalus, the species was seen frequently this fall in the Sandhills Game Land, where much of the state's population resides. The peak count was five seen on September 3 (Richmond) by Dave Pavlik; and one was rather late in that county on October 1, as photographed by Will Stuart.

Polites vibex, this essentially Coastal Plain species seems to have a very small resident population along the southern Piedmont, as Will Stuart photographed one at Mineral Springs (Union) on September 23.

Problema byssus, Jeff Pippen again had one at Duke Forest (Durham) this season, at the inner edge of the range; he saw one on September 14.

Euphyes pilatka, though not scarce locally in coastal marshes, a count of eight seen by Mike Turner on September 20 at plantings at the NCDOT Rest Area/Visitor Center on Roanoke Island (Dare) was quite a surprise, though Sawgrass (*Cladium jamaicense*) is present nearby.

Amblyscirtes carolina, Nick Flanders saw two at Pocosin Lakes National Wildlife Refuge (Tyrrell) on August 22; we receive few records from that area of the state.

Lerodea eufala, there were many more reports than usual for this species in the Piedmont and mountains, regions where it is probably a rare resident though possibly a short-distance migrant. The only new county record was made by Nick Flanders, who saw one in the Uwharrie Game Land (Davidson) (**COUNTY**) on September 12. After finding a first record for Madison County in June, Pete Dixon photographed one in that mountain county on the rather late date of October 25; there are very few montane records for the species.

Calpodes ethlius, oddly enough, despite a few summer records, there was not a single report of adults in the state in the fall season; most years have a few sightings at this season.

ADDENDUM:

Hermeuptychia intricata, over the past few months much has been learned about its range in NC (and SC), from Tom Austin, at Clemson University. He has reviewed all photos of the genus posted on iNaturalist for the two states. Most, of course, are *H. sosybius*, but he found some that he has vetted as *H. intricata*, based on the shape of the post-median band (on the ventral side), and the dorsal coloration (for a male). He has determined that there is now photographic documentation for the species in NC in these additional counties: Beaufort, Cumberland, Moore, and Onslow in the Coastal Plain; and Chatham in the eastern Piedmont. It was previously known from Carteret, Craven, Jones, and Duplin counties. In fact, Bob Cavanaugh collected one from the Croatan National Forest (Carteret) on August 7 of this year. Also, Austin believes that a photograph from Buncombe County, in the mountains, is also *H. intricata*, but as there are no specimens known yet from the mountain region, and few from the adjacent Piedmont, this is a tentative identification for now. The spread of dates for these and previous records for the state are now from April 29 to May 7, July 2, and many from August 4 to September 3. These dates suggest three broods, with the last presumably the largest, though this might be field work bias. Certainly, the spread of dates for the first and (presumably) second broods is much wider than listed

above. Austin's observations show that this species is not at all rare in the Carolinas, at least in the Coastal Plain north to Beaufort County, NC. The species inhabits moist hardwood forests with a richer soil and a more diverse herb layer than does *H. sosybius*, often slightly into uplands, and it is less inclined to occur in swampier sites, sometimes with pines, cane, etc., than where the much more widespread *H. sosybius* can be found. Lastly, *H. intricata* is a relatively slow flier (a bit like *Cyllopsis gemma*), easy to track down and photograph; *H. sosybius* is more skittish, harder to approach within five feet, and thus more difficult to photograph at close range (fide Tom Austin). Certainly, the range, habitats, and behavior of this recently described species are still only partly understood, and many more counties, at least in the southern Coastal Plain, ae expected to be documented in the near future—as long as excellent photographs (or specimens) are made available for confirmation.

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

Brian sends in the following South Carolina records for the SLS News:

Butterflies:

Jasper Co., SC, Tillman Sand Ridge HP, 25 Aug 2019, Dennis Forsythe, Liz & Hugh Garrett, Alison Smith, Dave & Marty Kastner

Papilionidae: *Papilio troilus*
Pieridae: *Pyrisitia lisa*
Nathalis iole **(county record)**
Abaeis nicippe
Phoebis sennae
Lycaenidae: *Hemiargus ceraunus*
Cupido comyntas
Strymon melinus
Nymphalidae: *Junonia coenia*
Hesperiidae: *Thorybes pylades*
Thorybes confusis
Erynnis zarucco
Urbanus proteus
Polites origenes
Pompeius verna
Euphyes vestris
Lerema accius
Oligoria maculata
Hylephila phyleus

Jasper Co., SC, Beck's Ferry Rd., 25 Aug 2019, Dennis Forsythe, Liz & Hugh Garrett, Alison Smith, Dave & Marty Kastner

Papilionidae: *Papilio glaucus*
Papilio palamedes
Pieridae: *Pyrisitia lisa*
Phoebis sennae
Abaeis nicippe
Nymphalidae: *Phyciodes tharos*
Agraulis vanillae
Euptoieta claudia
Junonia coenia
Limenitis arthemis astyanax
Hermeuptychia sosybius
Neonympha areolata
Hesperiidae: *Epargyreus clarus*
Thorybes bathyllus
Erynnis horatius
Erynnis zarucco
Burnsius oileus

Polites vibex
Polites origenes
Pompeius verna
Euphyes vestris
Lerema accius
Oligoria maculata

Jasper Co., SC, B & C Landing, 30 Aug 2019, Dennis & Donna Forsythe
Nymphalidae: *Anthanassa texana seminole*

Charleston Co., SC, James Island, 30 Aug 2019, Dennis & Donna Forsythe
Nymphalidae: *Heliconius charithonius*

Aiken Co., SC, Crackerneck WMA, 7 Sep 2019, Lois Stacey, John Demko, Sharon Watson, Debo Boddiford, Mary Pallon, Eric Monaco, Dave & Marty Kastner
Papilionidae: *Papilio glaucus*
Papilio troilus
Papilio palamedes
Pieridae: *Pyrisitia lisa*
Abaeis nicippe
Phoebis sennae
Lycaenidae: *Hemiargus ceraunus*
Cupido comyntas
Strymon melinus
Nymphalidae: *Agraulis vanillae*
Euptoieta claudia
Phyciodes tharos
Libytheana carinenta
Junonia coenia
Limenitis arthemis astyanax
Hermeuptychia sosybius
Hermeuptychia intricata
Danaus plexippus
Hesperiidae: *Epargyreus clarus*
Urbanus proteus
Thorybes bathyllus
Erynnis horatius
Burnsius albescens
Burnsius oileus
Copaeodes minima
Hylephila phyleus
Polites vibex
Problema byssus
Pompeius verna
Euphyes vestris
Lerema accius
Amblyscirtes aesculapius
Panoquina ocola

Laurens Co., SC, FS Rd 355, Enoree District, Sumter NF, 9 Sep 2019, Dennis & Donna Forsythe
Pieridae: *Colias philodice*
Phoebis sennae
Abaeis nicippe
Pyrisitia lisa
Lycaenidae: *Cupido comyntas*
Celastrina neglecta
Nymphalidae: *Asterocampa celtis*
Asterocampa clyton **(county record)**

Charleston Co., SC, Camp Seewee & Salt Pond Landing (FS 243), 15 Sep 2019, Dennis Forsythe

Papilionidae: *Papilio palamedes*
Pieridae: *Phoebis sennae*
Abaeis nicippe
Pyrisitia lisa
Nymphalidae: *Agraulis vanillae*
Heliconius charithonius
Phyciodes tharos
Vanessa virginiensis
Vanessa cardui
Junonia coenia
Hesperiidae: *Urbanus proteus*
Erynnis horatius
Burnsius albescens
Lerema accius
Nastra lherminier
Poanes zabulon
Atalopedes campestris
Hylephila phyleus
Polites vibex
Panoquina ocola

Kershaw Co., SC, Lugoff, 20 Sep 2019, Alice Clark

Nymphalidae: *Agraulis vanillae*
Danaus plexippus – tagged individual

Beaufort Co., SC, Marine Corps Recruit Depot, Parris Island, 21 Sep 2019, Dennis Forsythe, Alison Smith, Tom Austin, Dave & Marty Kastner

Papilionidae: *Papilio cresphontes*
Papilio palamedes
Pieridae: *Ascia monuste*
Phoebis sennae
Pyrisitia lisa
Abaeis nicippe
Lycaenidae: Calycopis cecrops
Callophrys gryneus
Strymon melinus
Leptotes cassius
Hemiargus ceraunus
Nymphalidae: Agraulis vanillae
Phyciodes phaon
Junonia coenia
Asterocampa celtis
Hermeuptychia sosybius
Danaus gilippus
Hesperiidae: Epargyreus clarus
Urbanus proteus
Erynnis horatius
Erynnis zarucco
Burnsius albescens
Burnsius oileus
Lerodea eufala
Copaeodes minima
Hylephila phyleus
Polites vibex
Atalopedes campestris
Euphyes vestris

Lerema accius
Panoquina panoquin
Panoquina ocola
Oligoria maculata

Jasper Co., SC, US 17 nr. SC 315 along roadsides, 21 Sep 2019, Richard Stickney
Pieridae: *Pyrisitia lisa*
Phoebis sennae
Lycaenidae: *Calycopis cecrops*
Nymphalidae: *Agraulis vanillae*
Junonia coenia
Hesperiidae: *Urbanus proteus*
Panoquina ocola
Lerema accius
Hylephila phyleus
Poanes viator
Euphyes pilatka

Jasper Co., SC, Purrysburg Road, about 100 yards either side of the bridge over I-95, 21 Sep 2019, Richard Stickney
Pieridae: *Pyrisitia lisa*
Phoebis sennae
Lycaenidae: *Calycopis cecrops*
Nymphalidae: *Danaus plexippus*
Agraulis vanillae
Vanessa cardui
Junonia coenia
Phyciodes tharos
Hermeuptychia sosybius
Hesperiidae: *Epargyreus clarus*
Urbanus proteus
Panoquina ocola
Lerema accius
Hylephila phyleus

Chesterfield Co., SC, Sandhills NWR, 22 Sep 2019, Richard Stickney
Pieridae: *Pyrisitia lisa*
Abaeis nicippe
Phoebis sennae
Lycaenidae: *Strymon melinus*
Nymphalidae: *Agraulis vanillae*
Euptoieta claudia
Junonia coenia
Phyciodes tharos
Hesperiidae: *Urbanus proteus*
Erynnis zarucco
Panoquina ocola
Nastra lherminier
Lerema accius
Poanes yehl
Euphyes dion

Jasper Co., SC, in and around Savannah NWR, 28 Sep 2019, Dennis Forsythe and Donald Woytowick
Pieridae: *Phoebis sennae*
Pyrisitia lisa
Abaeis nicippe
Lycaenidae: *Strymon melinus*

Nymphalidae: *Agraulis vanillae*
Heliconius charithonia
Junonia coenia
Vanessa cardui
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Erynnis zarucco
Copaeodes minima
Polites vibex
Hylephila phyleus
Euphyes pilatka
Panoquina ocola

Orangeburg Co., SC, The Hundred Acre Woods at SI Group, 28 Sep 2019, Dave & Marty Kastner and Arthur Sweatman
Papilionidae: *Papilio palamedes*
Papilio glaucus – caught by Carolina mantis
Pieridae: *Abaeis nicippe*
Phoebis sennae
Pyrisitia lisa
Lycaenidae: *Calycopis cecrops*
Strymon melinus
Nymphalidae: *Agraulis vanillae*
Euptoieta claudia
Phyciodes tharos
Vanessa virginiensis
Junonia coenia
Limenitis arthemis astyanax
Limenitis archippus
Anaea andria
Lethe creola
Lethe portlandia
Hermeuptychia sosybius
Cyllopsis gemma
Hesperiidae: *Urbanus proteus*
Erynnis horatius
Erynnis zarucco
Burnsius albescens
Ancyloxypha numitor
Copaeodes minima
Hylephila phyleus
Atalopedes campestris
Polites vibex
Polites origenes
Wallengenia egeremet
Pompeius verna
Euphyes vestris
Lerema accius
Panoquina ocola

Charleston Co., SC, Folly Beach, Michigan Ave. just off Sandbar Lane, 1 Oct 2019, Dennis & Donna Forsythe
Lycaenidae: *Leptotes cassius*

Charleston Co., SC, Santee Coastal Reserve, 2 Oct 2019, Dennis Forsythe
Papilionidae: *Papilio palamedes*
Pieridae: *Phoebis sennae*

Phoebis agarithe – **rare migrant**
Pyrisitia lisa
Lycaenidae: *Parrhasius m-album*
Nymphalidae: *Junonia coenia*
Agraulis vanillae
Hesperiidae: *Urbanus proteus*
Panoquina ocola

Lancaster Co., SC, Indian Land, 4 Oct 2019, Carolyn Seaton
Hesperiidae: *Lerodea eufala*

Charleston Co., SC, Santee Coastal Reserve, 4 Oct 2019, Dennis Forsythe, Tom Austin, Alison Smith, Carla Oldham, Dave & Marty Kastner
Papilionidae: *Papilio palamedes*
Pieridae: *Pyrisitia lisa*
Abaeis nicippe
Pheobis sennae
Lycaenidae: *Cupido comyntas*
Calycopis cecrops
Nymphalidae: *Agraulis vanillae*
Phyciodes tharos
Vanessa cardui
Junonia coenia
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Erynnis zarucco
Lerodea eufala
Copaeodes minima
Polites vibex
Wallengrenia otho
Lerema accius
Panoquina ocola

Greenville Co., SC, Simpsonville, 6 Oct 2019, Virginia Kopka
Nymphalidae: *Heliconius charithonius*

Charleston Co., SC, Ft. Lamar HP, James Island, 6 Oct 2019, Donna Forsythe and Elizabeth Anderegg
Nymphalidae: *Anartia jatrophe* – migrant

Berkeley Co., SC, Francis Marion NF, Farewell Corners Rd A, 6 Oct 2019, Dennis Forsythe, Tom Austin, Alison Smith, Chris & Cheryl Talkington, Carla Oldham, Dave & Marty Kastner
Pieridae: *Pyrisitia lisa*
Riodinidae: *Calephelis virginiensis*
Lycaenidae: *Cupido comyntas*
Strymon melinus
Nymphalidae: *Agraulis vanillae*
Phyciodes tharos
Junonia coenia
Cercyonis pegala
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Lerodea eufala

Charleston Co., SC, Port Rd. (FS 223), Francis Marion NF, 6 Oct 2019, Dennis Forsythe, Tom Austin, Alison Smith, Chris & Cheryl Talkington, Carla Oldham, Dave & Marty Kastner
Pieridae: *Pyrisitia lisa*

Abaeis nicippe
Phoebis sennae
Riodinidae: *Calephelis virginiensis*
Lycaenidae: *Hemiargus ceraunus*
Cupido comyntas
Calycopis cecrops
Strymon melinus
Nymphalidae: *Agraulis vanillae*
Phyciodes tharos
Vanessa cardui
Junonia coenia
Hermeuptychia sosybius
Hermeuptychia intricata
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Burnsius oileus
Wallengrenia otho
Pompeius verna
Euphyes vestris
Lerema accius
Panoquina ocola

Charleston Co., SC, Florida Bay, Francis Marion NF, 6 Oct 2019, Dennis Forsythe, Tom Austin, Alison Smith, Chris & Cheryl Talkington, Carla Oldham, Dave & Marty Kastner
Pieridae: *Pyrisitia lisa*
Abaeis nicippe
Phoebis sennae
Riodinidae: *Calephelis virginiensis*
Lycaenidae: *Calycopis cecrops*
Strymon melinus
Nymphalidae: *Agraulis vanillae*
Euptoieta claudia
Junonia coenia
Cercyonis pegala
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Erynnis zarucco
Burnsius albescens
Nastra lherminier
Polites vibex
Wallengrenia otho
Polites themistocles
Panoquina ocola

Charleston Co., SC, Port Rd. (FS 223), Francis Marion NF, 8 Oct 2019, Dennis & Donna Forsythe
Pieridae: *Phoebis sennae*
Pyrisitia lisa
Lycaenidae: *Calycopis cecrops*
Strymon melinus
Riodinidae: *Calephelis virginiensis*
Nymphalidae: *Junonia coenia*
Agraulis vanillae
Phyciodes tharos
Hermeuptychia sosybius
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Panoquina ocola

Chesterfield Co., SC, Carolina Sandhills NWR, 11 Oct 2019, Will Stuart
Pieridae: *Phoebis sennae*
Pyrisitia lisa
Abaeis nicippe
Nymphalidae: *Junonia coenia*
Agraulis vanillae
Euptoieta claudia
Vanessa virginiensis
Vanessa cardui
Danaus plexippus
Hesperiidae: *Achalarus lyciades*
Urbanus proteus
Burnsius albescens
Lerodea eufala
Lerema accius
Panoquina ocola
Hylephila phyleus
Hesperia meskei

Cherokee Co., SC, Carolina Ridge Rd. & Buck Shoals Road behind the Fire station, 12 Oct 2019, Doug Allen
Pieridae: *Zerene cesonia* **(county record)**
Phoebis sennae
Pyrisitia lisa
Abaeis nicippe
Colias eurytheme
Lycaenidae: *Cupido comyntas*
Nymphalidae: *Phyciodes tharos*
Vanessa virginiensis
Vanessa cardui
Danaus plexippus
Hesperiidae: *Urbanus proteus* **(county record)**
Burnsius albescens **(county record)**
Burnsius communis – both species confirmed by dissection
Lerodea eufala **(county record)**
Hylephila phyleus
Atalopedes campestris
Pompeius verna
Euphyes vestris **(county record)**
Lerema accius
Panoquina ocola **(county record)**

Jasper Co., SC, Tillman Sand Ridge HP and area, 12 Oct 2019, Dennis & Donna Forsythe
Pieridae: *Phoebis sennae*
Eurema daira
Pyrisitia lisa
Abaeis nicippe
Nathalis iole
Lycaenidae: *Hemiargus ceraunus*
Nymphalidae: *Agraulis vanillae*
Junonia coenia
Vanessa virginiensis
Anthanassa texana seminole
Phyciodes tharos
Danaus plexippus
Hesperiidae: Burnsius albescens
Burnsius oileus
Copaeodes minima

Hylephila phyleus
Polites vibex
Euphyes vestris
Panoquina ocola

Spartanburg Co., SC, Holston Creek Park and around house, 15 Oct 2019, Doug Allen
Papilionidae: *Battus philenor*
Papilio polyxenes – larvae
Pieridae: *Abaeis nicippe*
Phoebis sennae
Lycaenidae: *Strymon melinus*
Nymphalidae: *Agraulis vanillae*
Euptoieta claudia
Phyciodes tharos
Vanessa virginiensis
Vanessa cardui
Junonia coenia
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Burnsius albescens **(county record)** – confirmed by dissection
Hylephila phyleus
Lerema accius
Atalopedes campestris

Spartanburg Co., SC, Holston Creek Park and around house, 27 Oct 2019, Doug Allen
Pieridae: *Abaeis nicippe*
Phoebis sennae
Lycaenidae: *Cupido comyntas*
Nymphalidae: *Agraulis vanillae*
Euptoieta claudia
Vanessa virginiensis
Vanessa cardui
Junonia coenia
Libytheana carinenta
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Hylephila phyleus
Atalopedes campestris
Lerodea eufala
Lerema accius

Charleston Co., SC, Battery Jasper, Ft. Moultrie, 18 Oct 2019, Dennis & Donna Forsythe
Pieridae: *Phoebis sennae*
Pyrisitia lisa
Lycaenidae: *Hemiargus ceraunus*
Nymphalidae: *Agraulis vanillae*
Vanessa cardui
Junonia coenia
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Hylephila phyleus
Polites vibex
Panoquina ocola

Lexington Co., SC, Timmerman Trail, Cayce, 18 Oct 2019, Dave & Marty Kastner
Pieridae: *Phoebis sennae*

Abaeis nicippe
Pyrisitia lisa
Nymphalidae: *Agraulis vanillae*
Phyciodes tharos
Vanessa virginiensis
Vanessa atalanta
Junonia coenia
Asterocampa celtis
Hermeuptychia sosybius
Cyllopsis gemma
Danaus plexppus
Hesperiidae: Urbanus proteus
Burnsius albescens
Euphyes vestris
Lerema accius
Panoquina ocola

Marion Co., SC, Woodbury WMA, 26 Oct 2019, Marty Kastner
Pieridae: *Pyrisitia lisa*
Abaeis nicippe
Phoebis sennae
Nymphalidae: Agraulis vanillae
Phyciodes tharos
Junonia coenia
Hesperiidae: Pompeius verna **(county record)**
Euphyes vestris

Lexington Co., SC, Timmerman Trail, Cayce, 28 Oct 2019, Dave & Marty Kastner
Pieridae: *Phoebis sennae*
Abaeis nicippe
Pyrisitia lisa
Lycaenidae: *Strymon melinus*
Nymphalidae: *Agraulis vanillae*
Phyciodes tharos
Polygonia interrogationis
Polygonia comma
Vanessa atalanta
Asterocampa celtis
Lethe portlandia
Hermeuptychia sosybius
Cyllopsis gemma
Hesperiidae: *Urbanus proteus*
Burnsius albescens
Euphyes vestris

Charleston Co., Hampton Park, 30 Oct 2019, Dennis & Donna Forsythe
Pieridae: *Phoebis sennae*
Pyrisitia lisa
Lycaenidae: *Leptotes cassius*
Nymphalidae: *Vanessa cardui*
Junonia coenia
Agraulis vanillae
Danaus plexippus
Hesperiidae: *Urbanus proteus*
Hylephila phyleus
Panoquina ocola
Calpodes ethlius - larva

Moths:

Greenville Co., SC, Greer, 2 Jun & 18 Jul 2019, Ken Carman
Geometridae: *Timandra amaturaria* **(state record)**

Greenville Co., SC, Greer, 29 Jun, 8 Jul, 1 Aug 2019, Ken Carman
Crambidae: *Scoparia biplagialis* **(state record)**

Greenville Co., SC, Greer, 31 Jul & 4 Sep 2019, Ken Carman
Autostichidae: *Autosticha kyotensis* **(state record)**

Pickens Co., SC, 3 Aug 2019, Ken Carman
Erebidae: *Idia denticulalis* **(state record)**

Greenville Co., SC, Greer, 24 Aug & 1 Sep 2019, Ken Carman
Gelechiidae: *Taygete attributella* **(state record)**

Greenville Co., SC, Greer, 25 Aug 2019, Ken Carman
Tortricidae: *Thyraylia hollandana* (**state record**)

Greenville Co., SC, Greer, 26 Aug 2019, Ken Carman
Erebidae: *Gabara distema* **(state record)**

Berkeley Co., SC, Francis Marion NF, Hoover Rd., 32.982N 79.787W, 23 Aug 2019, BG Scholtens
Tineidae: *Nemapogon angulifasciella* **(county record)**
Gelechiidae: *Deltophora sella* **(county record)**
Dichomeris aglaia **(county record)**
Sinoe kwakae **(state record)**
Tortricidae: *Corticivora parva* **(county record)**
Cochylichroa hospes **(county record)**
Zomaria rosaochreana **(county record)**

Berkeley Co., SC, Francis Marion NF, Hoover Rd., 32.982N 79.787W, 20 Sep 2019, BG Scholtens
Glyphipterigidae: *Drymoana blanchardi* **(county record)**
Tortricidae: *Thaumatographa jonesi* **(state record)**
Eucosma parmatana **(county record)**
Epiblema exacerbatricana **(state record)**
Eucosma verniochreana **(state record)**
Crambidae: *Microcrambus minor* **(county record)**
Erebidae: *Dyspyralis nigellus* **(county record)**
Noctuidae: *Dargida rubripennis* **(county record)**

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

John sends in the following brief report:

Kingsport, TN (Sullivan Co.) had an unusually strong flight of *Agraulis vanillae* starting in June of 2019; there were days in August and September at my home when they were the most abundant butterfly species.

They only disappeared with the first hard freeze around Nov. 12 or so. (*A. vanillae* was quite rare here in the mountains throughout the 1980's and 1990's; with only the occasional migrant being seen in very late summer.)

Texas:

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

Harry sends in the following 2019 fall report for Virginia:

Record heat and drought dominated the month of September. Trees around Leesburg (Loudoun County) mostly turned brown or bare by Oct. 1 due to lack of rain since early July. Forest vegetation, especially *Verbesina alternifolia*, host of *C. neglecta* and *C. nycteis*, and major nectar source for woodland Lepidoptera, completely dead in some areas by mid-August. Butterfly numbers went way down in most areas around Leesburg, except at Ida Lee Community Gardens in Leesburg, VA., which normally attracts huge numbers of butterflies typical for our region. Night temperatures first down to mid-30's (near-frost) on Oct. 19, with several subsequent near-frosts. Last observations on Nov. 11, after which winter temperatures, hard freezes and snow flurries arrived, put an end to the butterfly season except possibly some species to reappear once the weather warms up.

Butterflies [all reports H. Pavulaan except where noted]. County and state records show county in all-caps.

Pterourus glaucus – Loudoun Co.: Lovettesville, 9/20/2019 (freshly emerged male observed, indicating very partial fall brood).

Heraclides cresphontes – Loudoun Co.: Leesburg, 9/20/2019 (freshly emerged male observed, indicating rare, very partial third brood). However, all *Ptelea trifoliata* trees behind my yard have browned and lost their leaves due to drought conditions. Not a good condition for oviposition.

Pieris rapae – Loudoun Co.: Leesburg, Ida Lee Park, 10/28/2019 (10+ individuals observed; interesting late-season burst of fresh adults), 11/11/2019 (1 individual observed).

Colias eurytheme – Loudoun Co.: Leesburg, 10/24/2019 (about 20 individuals observed at various locations, varying from cold to warm weather forms), 11/11/2019 (1 individual observed).

Abaeis nicippe – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (1 male observed). Sudden dropoff of numbers in September, gone by mid-month. Heavy mortality with many chrysalids found that were infected with virus and turned black (about 2 dozen larvae taken in for rearing all died of virus in pupa stage); Leesburg, 10/27/2019 (one individual observed in my garden, likely bred on my Senna plants).

Nathalis iole – MONTGOMERY county record: Blacksburg, 10/10/2019 (photograph posted to iNaturalist by anonymous contributor "magicspaceowl"). [It's somewhat unfortunate that many contributors to online groups don't wish to have their significant contributions credited to their actual names.]

Everes comyntas – Loudoun Co.: Leesburg, 10/24/2019 (3 fresh individuals observed, somewhat unusual for this region), 10/27/2019 (1 worn individual observed).

Dione (*Agraulis*) *vanillae* – Richmond City: Chimborazo Park, 10/7/2019 (1 individual observed, Paul Bedell). *"Agraulis" vanillae* is now *Dione vanillae* [Zhang, et. al., 2019, *Changes to North American butterfly names*, The Taxonomic Report 8(2)].

Euptoieta claudia – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (100+ individuals observed, mostly very fresh – normal for this location in fall), 10/14/2019 (100+ individuals observed, all stages of wear from fresh to tattered), 10/28/2019 (20+ very worn individuals observed), 11/11/2019 (1 individual observed).

Junonia coenia – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (25 individuals observed or netted), 10/14/2019 (100+ individuals observed/netted/collected), 10/19/2019 (25 individuals observed, all worn), 10/24/2019 (50+ individuals observed), 10/28/2019 (20+ worn individuals observed), 11/11/2019 (3 individuals observed). These were mostly cold weather forms especially "*rosa*" variants, some ventrally deep violet forms with ventral HW "nickel" wash and one individual displaying bright scarlet red).

Epargyreus clarus – Loudoun Co.: Leesburg, Ida Lee Park, 10/19/2019 (one fresh, odd late-season individual observed).

Gesta (*Erynnides*) *funeralis* – GREENE state and county record: Shenandoah National Park, 9/10/2017 (photograph posted to bugguide.net by Brenda Clements Jones). *"Erynnis"* (*Erynnides*) *funeralis* is now *Gesta funeralis* [Zhang, et. al., 2019, *Changes to North American butterfly names*, The Taxonomic Report 8(2)].

Burnsius communis [formerly *Pyrgus communis*] – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (5 very skittish individuals observed), 10/14/2019 (50+ individuals observed, almost all females, also very skittish), 10/19/2019 (still about 10 observed), 10/24/2019 (50+ fresh individuals observed, all females), 10/28/2019 (3 females observed; rapid dropoff after several cold nights), 11/11/2019 (5 females observed).

Hylephila phyleus – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (15+ individuals observed), 10/14/2019 (100-200 individuals observed, flying all over flowerbeds, very active), 10/24/2019 (100+ fresh individuals observed), 10/28/2019 (50+ individuals observed), 11/11/2019 (3 individuals observed).

Atalopedes campestris – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (100+ individuals observed), 10/14/2019 (well over 500 individuals observed, flying all over flowerbeds, very active), 10/19/2019 (still about 50+ on the wing in flowerbeds), 10/24/2019 (100+ fresh individuals observed), 10/28/2019 (30+ individuals observed), 11/11/2019 (1 female collected, cold-weather form).

Panoquina ocola – Loudoun Co.: Leesburg, Ida Lee Park, 10/9/2019 (4 individuals observed), 10/14/2019 (15+ individuals observed/netted, unusually large numbers for this area), 10/19/2019 (down to 1 individual after nighttime temps down to the mid-30's), 10/24/2019 (numbers back up to 4 individuals despite very cold nights), 10/28/2019 (4 individuals observed); Leesburg, 10/27/2019 (last individual of the season in my backyard.

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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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