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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

SKIPPERS AND HAIRSTREAKS ON THE COAST OF GEORGIA, LATE SPRING 2010

BY

JOHN A. HYATT AND LANCE A. DURDEN



John Hyatt in relict rice field habitat in coastal Georgia, May 2010.
Habitat of *P. viator*, *P. bulenta*, *E. dion*, and many other skippers.
(Photograph by Lance Durden)

On May 22 and May 24 of this year, John Hyatt and Lance Durden spent some quality time in the field in coastal Georgia (see photographs) looking for skippers and hairstreaks. From all appearances, 2010 is a stellar year for skipper populations in the area, and hairstreaks aren't doing badly either - a pleasant change after a couple of quite poor seasons.

On 22 May a number of swamps, ditches, and relict rice fields were sampled between Darien and White Oak in McIntosh, Glynn, and Camden counties, GA. At several sites in McIntosh and Glynn counties, the population of *Poanes viator* was almost astounding - literally hundreds of specimens would be in sight at one time, crowding pickerel weed flowers in wetlands. If one looked carefully at a couple of hundred skippers, one or two would turn out to be *Euphyes dukesi* or *Problema bulenta*. A large number of



John Hyatt in relict rice field habitat in coastal Georgia, May 2010
(Photograph by Lance Durden)

Oligora maculata and significant numbers of *Problema byssus*, *Atrytone delaware*, and several more common species were also found. Conditions in extreme south coastal GA (Camden Co.) were very dry and pickerel weed growth was poor; correspondingly fewer skippers were found there.

North of Darien in McIntosh Co. and in adjacent Liberty Co., *P. viator* disappeared but we found sizable populations of *Poanes yehl*, *Euphyes dion*, and many *Problema byssus* in addition to *O. maculata* and the usual common species. We also found colonies of *P. yehl*, *E. dion*, and other skippers on pickerel weed in Chatham County on 24 May. We were not successful in finding *Euphyes berryi*, *arpa*, or *palatka* in Georgia at this time, but we will seek these species again later in the season.

Hairstreaks were seldom seen except when nectaring. One single chinquapin tree in flower in McIntosh Co. yielded seven species - *Eurystrymon favonius* (probably the most abundant species), *Parrhasius m-album*, *Strymon calanus calanus*, *Strymon liparops liparops*, *Strymon cecrops*, *Strymon melinus*, and *Atlides halesus*. Only *Strymon kingi* failed to attend the party.

(John A. Hyatt, E-Mail: jkshyatt@aol.com; Lance A. Durden, E-Mail: durden@georgiasouthern.edu)

NEW MEMBERS

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DONATIONS TO THE SLS SINCE THE MARCH 2010 ISSUE

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Charlie Covell (Sustaining)
Larry Gall (Benefactor)
Kelly Richers (Sustaining)
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Hugh Wyatt (Sustaining)
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[Many thanks to the above members for their very generous contributions to the SL Society - The Editor]

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The Southern Lepidopterists' Society is open to anyone with an interest in the Lepidoptera of the southern region of the United States. Annual membership dues:

Regular	\$20.00
Student	\$15.00
Sustaining	\$30.00
Contributor	\$50.00
Benefactor	\$70.00

A newsletter, The News of the Southern Lepidopterists' Society is published four times annually.

Information about the Society may be obtained from the Membership Coordinator or the Society Website: www.southernlepsoc.org/

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NOTICE

Dale H. Habeck longtime member of the SL Society and 1987 John Abbott Award honoree passed away on May 18, 2010. An obituary will be included in the September issue of the NEWS.

JAMES' CONTINUING CHALLENGE

James Adams continues his challenge to the SLS membership to write articles on "First Encounters" and "Dangers of Lepping". In this issue, the article "Right On Cue" by David Rupe should meet James' criteria. If so, we collect another \$10.00. Many thanks, James. [The Editor]

Reported to be the most poisonous beetle in the world:

The pupal stage of the leaf beetle *Diamphidia simplex* is used by hunters in Ghanzi District, Totswana, as a source of arrow poison.

The Leonard Plukenet collection:

This oldest insect collection comprises a single bound volume, with the specimens mounted on the pages - being pressed rather like flowers and glued in place. Made around 1690, this is probably one of the oldest insect collections surviving largely intact.

The world's longest insect:

A 56.7 cm-long stick-insect, *Phobaeticus chaini*, was recently described from Borneo and is known from only three specimens.

**MISSISSIPPI PLUME MOTHS
 FROM THE BRYANT MATHER COLLECTION
 (LEPIDOPTERA: PTEROPHORIDAE)**

BY

D. L. MATTHEWS

Bryant Mather collected more than 1,000 plume moths in Mississippi from 1958 to 1999. These specimens, together with material from the collections of the Mississippi Entomological Museum (MEM) at Mississippi State and the University of Mississippi, serve as the foundation for our knowledge of the state's fauna. The family Pterophoridae includes more than 1,139 species in 92 genera worldwide (Gielis 2003) with more than 171 species in 28 genera in North America north of Mexico. There are currently 32 pterophorid species and 16 genera recorded from Mississippi, approximately 19% of the nearctic fauna. Along with distributional data, the results of Mather's consistent collecting efforts in several counties provide useful information on the phenology and relative abundance of several species. A list of species and summary of specimen data (numbers collected, counties, and months for each) are presented (Table 1) along with distribution maps and images (Figs. 1-16) of some adults commonly found in the state.

Materials and Methods

Specimens from Mather's collection include records for 35 of the 82 Mississippi counties and were collected throughout the year. Many specimens are from Hinds County, Mather's residence in Clinton, and Warren County, where he worked for the US Army Corps of Engineers Structures Laboratory in Vicksburg. Most of the material was collected by Mather himself but a few specimens from the 1920's and 30's are from what was then Mississippi State College, "Miss. A& M College, and "Agr. Col. Miss." and in the 1990's, Mather's neighbors Millie and Eddie Roshore contributed numerous specimens. Rick Kergosien and Ricky Patterson also added to the Mather collection, increasing the coverage for several counties, especially in the southern part of the state. Counties where species are known to occur based on all available records are shaded in blue on the distribution maps with a black dot indicating specimens recorded from Mather's collection.

Mather's material was identified by the author from 1988-2000. While it was possible to determine many

specimens by wing maculation, others such as the *Hellinsia* borers, which are typically plain light tan to white, required dissection of genitalia. Genitalia were prepared using standard techniques and either mounted on permanent slides with Canada Balsam or stored in microvials in glycerin. All of Mather's specimens include a unique specimen number. These numbers, for all Lepidoptera exceeding 184,538 by October 1999, were on a separate label on each specimen prior to determination and then replaced by Mather with a handwritten duplicate determination label including the number. Label data were separately catalogued by both the author and Mather and organized by specimen number and by species. Mather's Pterophoridae are deposited at MEM, the Florida State Collection of Arthropods (FSCA) at the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History (MGCL), the National Museum of Natural History (USNM), and other institutions as well as the author's collection (DMC).

Results

The total number of individuals recorded for each species collected, number of county records, and months during which each species was collected is summarized in Table 1. In all, more than 1,500 specimens were examined and identified to species, 1,296 of these are from the Mather collection. Two specimens, females of the genus *Capperia*, remain unknown. Larval hostplants and life histories are known for all but four species (*Capperia* sp., *Stenoptilia pallistriga*, *Paraplatyptilia carolina*, and *Hellinsia citrites*) (Matthews & Lott 2005, Matthews 2006).

ABUNDANCE. Of the 32 species recorded for the state, *Pselnophorus belfragei* is by far the most common in terms of overall abundance with a total of 591 specimens, accounting for 39% of the material examined. The

Table 1. List of Pterophoridae species recorded from Mississippi.

	Species	# specimens	# counties	months collected
1.	<i>Lioptilodes albistriolatus</i> (Zeller, 1871)	99	14	-FMAMJ-ASOND
2.	<i>Platyptilia carduidactylus</i> (Riley, 1869)	4	4	--MA-J-----
3.	<i>Stenoptilodes brevipennis</i> (Zeller, 1874)	27	8	J---M--ASO-D
4.	<i>Stenoptilodes taprobanes</i> (Felder & Rogenhofer, 1875)	16	4	J---M-JASO-D
5.	<i>Stenoptilia pallistriga</i> Barnes & McDunnough, 1913	15	5	--MAM-JA-OND
6.	<i>Stenoptilia zophodactylus</i> (Duponchel, 1838)	4	4	--MAM-J-----
7.	<i>Paraplatyptilia auriga</i> (Barnes & Lindsey, 1921)	4	3	---AM-----
8.	<i>Paraplatyptilia carolina</i> (Kearfott, 1907)	4	2	----MJ-----
9.	<i>Oxyptilus delawaricus</i> Zeller, 1873	3	2	----MJ-----
10.	<i>Capperia</i> sp.	2	1	----MJ-----
11.	<i>Geina buscki</i> (McDunnough, 1933)	42	16	---AMJ-----
12.	<i>Geina tenuidactyla</i> (Fitch, 1854)	5	3	-----
13.	<i>Geina periscelidactylus</i> (Fitch, 1854)	6	5	----MJ-----
14.	<i>Geina sheppardi</i> B. Landry, 1989	2	1	-----
15.	<i>Sphenarches anisodactylus</i> (Walker, 1864)	19	3	-----SON-
16.	<i>Buckleria parvulus</i> (Barnes & Lindsey, 1921)	33	8	---AMJJ-SO--
17.	<i>Exelastis pumilio</i> (Zeller, 1873)	12	7	----M-JASO--
18.	<i>Pselnophorus belfragei</i> (Fish, 1881)	591	22	JFMAMJJASON-
19.	<i>Emmelina monodactyla</i> (Linnaeus, 1758)	91	10	JFMAMJJ-SOND
20.	<i>Oidaematophorus eupatorii</i> (Fernald, 1891)	1	1	-----J-----
21.	<i>Hellinsia elliottii</i> (Fernald, 1893)	2	2	-----J-----
22.	<i>Hellinsia paleaceus</i> (Zeller, 1873)	40	8	-FMAMJJAS---
23.	<i>Hellinsia inquinatus</i> (Zeller, 1873)	36	9	--MAMJJAS---
24.	<i>Hellinsia citrites</i> (Meyrick, 1908)	1	1	-----S---
25.	<i>Hellinsia balanotes</i> (Meyrick, 1908)	63	8	--MAMJJASON-
26.	<i>Hellinsia kellicottii</i> (Fish, 1881)	72	16	--MAMJJAS---
27.	<i>Hellinsia chlorias</i> (Meyrick, 1908)	8	6	----MJ-AS---
28.	<i>Hellinsia lacteodactylus</i> (Chambers, 1873)	15	6	----MJJ-----
29.	<i>Hellinsia glenni</i> (Cashatt, 1972)	59	10	--MAM-----
30.	<i>Hellinsia unicolor</i> (Barnes & McDunnough, 1913)	46	10	--MAMJJA----
31.	<i>Adaina simplicius</i> (Grossbeck, 1917)	100	9	---AMJJASO--
32.	<i>Adaina ambrosiae</i> (Murtfeldt, 1880)	86	14	---A-JJASON-

larvae of this species feed on leaves of pony-foot, *Dichondra caroliniensis* (Convolvulaceae), a common herbaceous plant in shady moist areas of lawns. Also numerous are the composite flower borers *Adaina simplicius* (100 specimens) and *Lioptilodes albistriolatus* (99 specimens). The morning glory plume moth, *Emmelina monodactyla* (91 specimens) is abundant where hedge bindweed, *Calystegia sepium* and other species of Convolvulaceae are present. The ragweed plume moth, *Adaina ambrosiae*, an external feeder of several composite species is next with 86 specimens. The *Hellinsia* stem borers, a morphologically distinct group within the genus, include 6 species (*H. balanotes*, *H. kellicottii*, *H. chlorias*, *H. lacteodactylus*, *H. glenni*, and *H. unicolor*). *Hellinsia kellicotti*, the goldenrod (*Solidago*) borer and *H. balanotes*, a borer of several species of *Baccharis*, were the most commonly encountered (72 and 63 specimens each). Adults of *H. balanotes* are relatively large and conspicuous, with wing spans up to 4.2 cm.

DISTRIBUTION. Samples from 34 counties show *Pselnophorus belfragei* to be the most widely distributed (22 counties), followed by *Geina buscki* (16), *Hellinsia kellicottii* (16), *Adaina ambrosiae* (14), and *Lioptilodes albistriolatus* (14). Five species appear to be limited to the northern half of the state: *Geina periscelidactyla*, *G. tenoidactyla*, *Oxyptilus delawaricus*, *Paraplatyptilia auriga*, and *P. carolina*. These and four others occur in the northeastern states and extend into the southern Appalachians. Three species with primarily tropical and subtropical distributions, *Sphenarches anisodactylus*, *Lioptilodes albistriolatus*, and *Exelastis pumilio*, are presently known to extend as far north as Warren county, the latter species to Oktibbeha and Lowndes counties. In comparing the known Mississippi fauna with Florida (41 species total) which includes additional neotropical species but lacks the more temperate fauna, 23 species occur in both states. With the possible exception of *Capperia* sp., no endemic species were found.

PHENOLOGY. Adults have been collected throughout the year, with at least 4 species available in any given month. The greatest diversity is found April through June with a peak of 26 species in May. Another smaller peak occurs in September with 16 species recorded. Two species, *Pselnophorus belfragei* and *Emmelina monodactyla* have been collected 11 months out of the year. The latter is known to overwinter as adults. Some of the more typically northern species, such as the grape feeders, *Geina periscelidactylus* and *G. sheppardi* (May, and May-June), are single brooded, while others such as *Lioptilodes albistriolatus* use several hosts and have multiple or continuous broods.

Discussion

As would be expected with more extensive sampling, Mather's collecting near his home in Hinds County yielded the most species recorded (20), followed by Warren (19), Harrison (19), and Oktibbeha (18) counties. Additions to the state fauna are expected as new material from local and habitat specific surveys is identified and more counties, relic habitats, and specific hostplants are sampled. As the Mississippi pterophorid fauna includes both temperate and subtropical species, the state as a whole has the potential for several more species. Some species which have not been recorded but are possible given their regional distributions include *Exelastis rhynchosiae* (Dyar), *Dejongia californicus* (Walsingham), and *Megalorhipida leucodactyla* (Fabricius). Bryant Mather's steadfast collecting efforts have provided a significant contribution to our knowledge of Pterophoridae and other lepidopteran families in the state and his collection provides an important base resource for further surveys.

Acknowledgements

In addition to Bryant Mather, the following individuals are acknowledged for providing material examined and/or technical support: Richard L. Brown (MEM), Paul K. Lago (Univ. Miss.), Reed A. Watkins (USNM), Terry A. Lott (FLMNH), and Jacqueline Y. Miller (MGCL). Thanks are also due to Andrew D. Warren (MGCL) and Jacqueline Y. Miller for their reviews of the text.

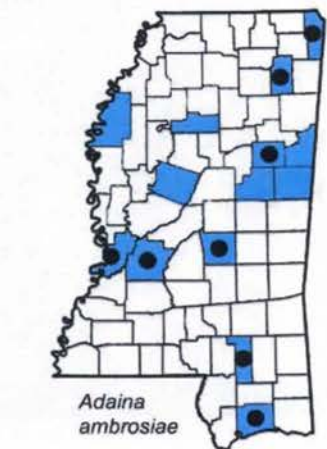
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Figures 1-16. Some Mississippi plume moths: 1) *Lioptilodes albistriolatus*; 2) *Platyptilia carduidactylus*; 3) *Stenoptilodes taprobanes*; 4) *Stenoptilia pallistriga*; 5) *Paraplatyptilia auriga*; 6) *Geina buscki*; 7) *G. periscelidactylus*; 8) *Sphenarches anisodactylus*; 9) *Pselnophorus belfragei*; 10) *Emmelina monodactyla*; 11) *Hellinsia paleaceus*; 12) *H. inquinatus*; 13) *H. glenni*; 14) *H. unicolor*; 15) *Adaina simplicius*; 16) *A. ambrosiae*.





ADULT PHENOTYPES OF *EPIMECIS HORTARIA* (FABRICIUS, 1794)
(LEPIDOPTERA: GEOMETRIDAE) FROM ST. TAMMANY PARISH,
LOUISIANA

BY
VERNON ANTOINE BROU JR.

In an earlier publication (Brou, 2003) I reported on, and illustrated the numerous phenotype variations that exist from Louisiana for the large geometrid moth *Epimecis hortaria* (Fabricius). At that time, articles in the SL News were not published in color and I illustrated only one set of wings to save space and reduce cost. Because of those issues, reader's were handicapped in seeing the true impact of the maculation and colors occurring among the specimens of this species at a single location. I take this opportunity to better illustrate the specimens along with additional phenotype variations best illustrated in color (Figs. 1 and 2).



Fig. 1. Phenotype variations of *E. hortaria* males (a-n), near Abita Springs, St. Tammany Parish, Louisiana.



Fig. 2. Phenotype variations of *E. hortaria* males (a-d) and females (e-p), near Abita springs, Louisiana.

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THE EUROPEAN YELLOW UNDERWING MOTH, *NOCTUA PRONUBA*, (LEPIDOPTERA: NOCTUIDAE), IN FLORIDA

BY

J. B. HEPPNER^{1,2} AND T. S. DICKEL³

The European species, *Noctua pronuba* (Linnaeus), called the large yellow underwing, has a considerable economic impact on various crops and horticulture in Europe and other areas of the Palearctic. It was first found in eastern North America in 1979 in Nova Scotia (Neil 1981). Since then, it quickly spread to much of North America north of Mexico, even to Alaska and northern Canada (Lafontaine pers. comm.; Philip in litt.; Powell 2002; Wagner 2005). In the Southeast, it has been reported for northern Georgia (Adams, pers. comm.) and Louisiana (Brou 1997), but until now not in Florida (Heppner, 2003). In the Palearctic, it occurs throughout Europe and North Africa, east to northern India, Central Asia, and western Siberia (Kravchenko *et al.* 2007).



European Yellow Underwing Moth, Noctua pronuba

The present report records the species in northern Florida for SLS members: one female from Goethe State Forest, Levy Co., 20 Jun 2009 (T. S. Dickel coll.). As noted already elsewhere (Dickel & Heppner 2009), it seems likely that the species will eventually spread throughout the Nearctic and into northern Mexico. It will be interesting to see how far into the tropics it will get in Mexico, as well as into tropical southern Florida, since in the Palearctic it is restricted to more arid regions and mountain areas like northern India in its natural range, and has not moved into tropical areas nearby in Africa and Asia.

Passoa & Hollingsworth (1996) noted available biological information for the species in North America. Considerable literature is available on this species in Europe and summaries can be found in such works as Hill (1987) and Carter (1984). Numerous economic reports for the species can be found in Zhang (1994). Madge (1962) has the most detailed notes on the biology of the species. One generation per year is found in northern Europe, but 3-4 generations have been reported in Israel (Avidov & Harpaz 1969). Neil and Specht (1987) noted details of the last instar larva. Wagner (2005) illustrated the larva, noting that early instars are yellow-green instead of the brown cutworm-type appearance of the last instar.

Passoa & Hollingsworth (1996) noted available biological information for the species in North America. Considerable literature is available on this

Larvae of *N. pronuba* are polyphagous cutworms, feeding on a large number of hostplants, including such major crops as beets (*Beta*), cabbage (*Brassica*), carrots (*Daucus*), grapes (*Vitis*), lettuce (*Lactuca*), potato (*Solanum*), strawberry (*Fragaria*), and tomato (*Lycopersicon*), as well as flower crops like carnations (*Dianthus*), chrysanthemums (*Chrysanthemum*), gladiolas (*Gladiolus*), and violets (*Viola*) (Passoa & Hollingsworth 1996). Many other wild herbaceous plants and grasses, and rarely trees and shrubs, are also attacked (Carter 1984). It can be a major pest in Europe and the Middle East (Avidov & Harpaz 1969). The species can be abundant in parts of North America now, but seems not to have much economic impact yet on agriculture or horticulture, versus what is found in Europe.

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Thanks to J. D. Lafontaine (Canadian National Collection, Agriculture Canada, Ottawa, Ontario, Canada) for reviewing the manuscript. P. Opler (Loveland, CO) and Prof. J. A. Powell (Univ. California, Berkeley, CA) kindly provided notes on the western distribution of *N. pronuba*, while Prof. J. Adams (Dalton, GA) sent notes on Georgia specimens. The Florida specimen examined is from the collection of T. S. Dickel, Anthony, Florida.

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EASTERN TIGER SWALLOWTAIL PUDDLING ON A LIVE LEOPARD FROG

BY

BARBARA WOODMANSEE



Eastern Tiger Swallowing imbibing from Leopard frog's skin.

This image of a male Eastern Tiger Swallowtail puddling on a live Leopard frog was shot on March 27, 2010, in Levy County, Florida, on Barnett Creek Rd. in the Lower Suwannee National Wildlife Refuge.

It was a cool but sunny morning after a fairly heavy rain the night before and the Leopard frog was sitting in the sun near a puddle. The butterfly was puddling in the same area, and made his way over to the frog. The butterfly climbed up on the frog without disturbing it and continued probing gently all over the frog's head including the eyeballs, and then down the frog's shoulders and back. The frog never moved at all, other than to blink when the butterfly touched his eyeball.

THISTLETHWAITE WMA, ST. LANDRY PARISH, LOUISIANA,
MAY 2, 2010

BY

CRAIG W. MARKS



Delaware Skipper, male, dorsal view,
May 2, 2010, Thistlethwaite WMA



Delaware Skipper, female, dorsal view,
May 2, 2010, Thistlethwaite WMA

After an unusually long and hard winter with several false starts, spring has finally hit southwestern Louisiana in earnest. On May 2, 2010, I had a wonderful day at Thistlethwaite Wildlife Management Area (WMA) in St. Landry Parish (for more information on Thistlethwaite, see Vol. 29 NO. 4 of the SLS' newsletter). On this day I saw 29 species including hundreds of Question Marks (*Polygonia interrogationis*), both adults and caterpillars. The Chinese privet (*Ligustrum sinense*) was blooming throughout the WMA, bringing in several species of butterflies to nectar including many Banded (*Satyrrium calanus*) and "Southern" Oak Hairstreaks (*S. favonius favonius*) and even Carolina Satyrs (*Hermeuptychia sosybius*).

In the last issue of this newsletter (Vol. 32 NO. 1), I reported on a colony of Delaware Skippers (*Anatrytone logan*) I had located at Thistlethwaite last August, 2009. As depicted by the pictures in that article, the specimen found at that time were quite dark. On May 2, I returned to the specific slough in which I had found the colony and saw five flying (3 males, 2 females). As is shown by the pictures below, the dark nature of the Delaware Skippers at this site are apparently not tied to season.

But that wasn't all I found that day. Along one of the roads I typically drive, I stopped in an area where Silvery Checkerspots (*Chlosyne nycteis*) are sometimes seen. Along with the many Question Marks puddling at a wet spot in the road I saw an unusually yellow Black Swallowtail. It was flying in a circular pattern, patrolling. Because I could clearly see more yellow than normal, I caught it (see below).



Black Swallowtail, male, dorsal view,
May 2, 2010, Thistlethwaite WMA



Black Swallowtail, male, ventral view,
May 2, 2010, Thistlethwaite WMA

Tyler described this as *Papilio polyxenes asterius*, form "*psuedoamericanus*" Brown 1942. It has "wide yellow bands equal to those of Anise Swt. The type is from Troy, Ill.; it occurs rarely anywhere, though more often in s. Ari. and commonly in e. Mexico." Scott called it a yellow form which "appears very rarely," listing Ill., Colo., N.M., w. Tex., se Ariz. and e. Mex. I'm unaware if this form has been previously reported from Louisiana.

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JAMES ADAMS - PHOTOGRAPHS FROM CALIFORNIA



Heliolonche pictipennis



Euproserpinus phaeton



Schinia niveicosta

These photographs were taken in May (2009) in California.

The *Heliolonche pictipennis* and *Schinia niveicosta* were from a road along Dillon Rd, in Riverside Co. It runs from N. Palm Springs east to Indio, north of I-10, and drops from cooler high desert to sandier lower desert along the way. The *pictipennis* is in a flower of *Malacothrix* (desert dandelion), its larval foodplant, and the *S. niveicosta* is on *Palafoxia* sp., its larval foodplants as well.

The two sphingids (a male and female) are *Euproserpinus phaeton*; doing a protective behavior of resting in "divots" in the sand to reduce shadows. They looked remarkably similar to dead gray leaves of surrounding plants. The location is some 5 miles SW of Anza in Riverside Co.

The *H. pictipennis* pictures were possible because the daytime temps were only about 55° F at the time. The temp when I was taking the pictures of the *E. phaeton* was even lower. So whereas cold temps don't usually signal good daytime collecting, they do allow for some great pictures of "hunkered down" bugs!

LEPIDOPTERA ENDEMISM IN SULAWESI (CELEBES), INDONESIA

BY

LANCE A. DURDEN

Sulawesi (Celebes) is a somewhat k-shaped Indonesian island about the size of Florida (Fig. 1). It straddles the equator between the large islands of Borneo and New Guinea although several small islands constituting the Moluccas (sometimes collectively called Maluku) lie between Sulawesi and New Guinea. Sulawesi has a unique geological history with parts of it originating from Australasian tectonic plates and parts from Asian plates (Hall, 2001). The contiguous plate sections that currently make up Sulawesi were submerged during part of their geological history and evidently no part of Sulawesi has been connected to any other major land mass in the last ~42 million years (Vane-Wright and de Jong, 2003). Ancestors of most of the current island fauna apparently



Fig. 1. Map of the Indo-Australian region showing major islands. The study location (Bogani Nani Wartabone National Park) is indicated by the black square in the northern peninsula of Sulawesi (map modified from the United States Central Intelligence Agency, World Factbook).

reached Sulawesi by either self-powered flight, swimming, rafting or storm-associated dispersal. However, with the exception of some flying animals such as groups of bats, birds and Lepidoptera, Sulawesi was evidently a difficult island to reach and even butterflies are somewhat depauperate on the island. This is highlighted by the 557 species of butterflies known from Sulawesi which is less than half the number of species known from Borneo (Vane-Wright and de Jong, 2003) and slightly more than half the number known from New Guinea (Parsons, 1999). Also, species clusters of certain groups of animals now make up a large part of the unique present-day fauna of Sulawesi. An ancestor for each of these clusters evidently reached Sulawesi within the last ~10 million years and then radiated to form several related endemic species (*i.e.*, not occurring naturally anywhere else on earth). For example, even though 10 endemic species of squirrels are known from Sulawesi (Musser *et al.*, 2010), these species fit neatly into three separate species clusters, each of which is related to squirrels that inhabit southeast Asian land masses to the west of Sulawesi suggesting a common ancestor. Further, the species of sucking lice that parasitize the Sulawesi squirrels are unique to each squirrel species but have obvious Asian ancestors to the west (Musser *et al.*, 2010).

Other groups of animals present on Sulawesi also have obvious Asian affinities but some have Australasian or Philippine origins suggesting several colonization routes to Sulawesi. For example, different elements of the Sulawesi flea fauna show clear affinities with each of these three regions (Durden and Traub, 1990). Because of the high level of speciation that has occurred on Sulawesi within the past few million years, much of the fauna of

Sulawesi is endemic to this island. For example, Musser (1987) reported that 97% of the terrestrial mammal species occurring on Sulawesi are endemic to this island whereas Vane-Wright and de Jong (2003) reported that 239 of the 557 (43%) species of butterflies are endemic to the Sulawesi region (Sulawesi and its small satellite islands). Further, Holloway (1987b) noted that 40% of the known notodontid moth species and 66% of the known limacodid species are endemic to Sulawesi (and its satellite islands in some cases). Therefore, despite the flying ability (with very few exceptions), of adult Lepidoptera, Sulawesi has exerted selection pressure for fairly intense speciation for this group of animals. However, as with almost any island, in addition to the endemic fauna, there is also a recognizable fauna of widespread species that are evidently good colonizers, some of which could have been introduced, inadvertently or purposely, and relatively recently through human activities.

As a young biologist, in 1985 I joined Project Wallace, a major expedition organized by the Royal Entomological Society to document the insect fauna of Dumoga Bone National Park (re-named Bogani Nani Wartabone National Park in 1991) in North Sulawesi. Sulawesi is divided into four major geographical regions: North Sulawesi ("*Sulawesi Utara*") constituting the northeastern arm of the island, South Sulawesi ("*Sulawesi Selatan*") constituting the southwestern arm, Southeastern Sulawesi ("*Sulawesi Tenggara*") representing the southeastern arm, and Central Sulawesi ("*Sulawesi Tengah*") making up the central region including the east-central peninsula (Fig. 1). These four regions are abbreviated as N., S., SE, and C. Sulawesi, respectively, in the following notes and in Table 1. My two months in Sulawesi in January and February, 1985, represented my first fieldwork in the



Fig. 2. *Graphium* spp. (mainly *G. a. androceles* and *G. anthedon milon*) imbibing moisture along the sandy and rocky bank of the Tumpah River.



Fig. 3. The lycaenid *Discolampa i. illissus* imbibing moisture from a rock in the shallows of the Tumpah River.

great rainforests of SE Asia. Being a medical entomologist by training, my evenings were spent baiting and setting live-traps for mammals (mainly rodents) and my mornings were typically spent collecting samples of ectoparasites and blood from captured mammals before I released them back into the forest. These samples included a large number of undescribed sucking lice, fleas and parasitic mites and also later provided information on ectoparasite transmitted diseases in the region such as scrub typhus (tsutsugamushi fever) and murine typhus.

I never knew how many mammals I would trap each night, of course, but on most afternoons I had time to traverse the forest trails and stream banks to pursue and record the Lepidoptera. I was confined to the lowland forest (~220 m elevation) and to diurnal recording. Jeremy Holloway (Natural History Museum, London) and Henry Barlow (Kuala Lumpur) were completing much more ambitious surveys of moths including nocturnal light trapping at various elevations at the same time during Project Wallace (Holloway, 1987b) and Heppner (1989) completed a Lepidoptera survey of a section of the park in October 1985. Nevertheless, I was able to identify and record several species of larger Lepidoptera, mostly butterflies. The few moths I recorded were either diurnal or found opportunistically. For example, a pristine death's head hawkmoth (*Acherontia styx*) was brought to me by a local small boy who had been instructed to take it to one of those

crazy entomologists and get it out of the house to avoid a family curse. Similarly, I found a dead, almost pristine, endemic *Brahmidia celebica* moth in one of the expedition buildings after it had presumably been attracted to the lights. As such, my records represent a fairly random survey of non-canopy, non-trapped Lepidoptera (mostly



Fig. 4. Mud-puddling *Graphium a. androcles* (one specimen) and *Graphium r. rhesus* (three specimens) killed by a tropical downpour (bank of the Tumpah River).



Fig. 5. *Melanitis leda celebicola* and a partially damaged female *Amathuxidia p. plateni* imbibing tree sap.



Fig. 6. *Mycalesis janardina opaculus* imbibing tree sap.

butterflies) found diurnally in the lowland forests of Nani Wartabone National Park during the first two months of 1985.

Two habitats produced more easily recorded Lepidoptera species than others. The stony and sandy banks of the Tumpah and Toraut Rivers were typically crowded with thousands of moisture-imbibing butterflies including several species of swallowtails in the genus *Graphium* (Fig. 2), plus a few lycaenids (Fig. 3) and the endemic snout butterfly, *Libythea geoffroy celebensis*. These butterflies, especially the swallowtails, were so committed to feeding that they were easy to approach, and on one occasion a fast-forming tropical downpour pounded and killed many specimens before they could fly into the refuge of the adjacent forest (Fig. 4). Another source of records, especially for the endemic morphines *Amathuxidia plateni plateni* and *Faunis menado menado*, the otherwise hard to approach endemic charaxines *Charaxes affinis affinis* and *Charaxes nitebis nitebis*, and some of the satyrines, were sap-exuding tree wounds (Figs. 5, 6).

Most of the other records were obtained by walking the various trails through the rain forest. As I traversed these trails, endemic red-knobbed hornbills flew overhead in the canopy making their characteristic calls reminiscent of a barking dog, endemic pygmy tree squirrels chattered their alarm calls and large troops (up to 30 individuals each) of endemic crested macaques sometimes descended close by to investigate an unusual forest intruder. Fortunately, I was fairly safe from predators because no large cats successfully colonized Sulawesi. Nevertheless, a large King cobra slithered past me once, small and highly venomous pit vipers were seen along the trails and on overhanging vines, and we heard that a nearby villager had been killed by a huge reticulated python during my stay. Apparently the endemic dwarf buffalos, called anoa, can be dangerous but I did not encounter any. I did encounter endemic babirusas (forest pigs; males have large recurved tusks) but they typically ran into the forest cover when they saw me. One expedition member contracted falciparum malaria apparently after forgetting to take his anti-malaria pills, and had to be air-lifted to Hong Kong for extended treatment. A few other members encountered chigger bites and mosquito bites were ubiquitous. Thankfully,

other than getting temporarily lost on some of the forest trails, I was able to avoid any major field-associated hazards.



Fig. 7. *Lohora dexamenus*, a satyrine endemic to N. and C. Sulawesi

Table 1 lists the 87 species of Lepidoptera I recorded in North Sulawesi together with subspecific designations (if appropriate), geographical distributions and comments on endemism. I also recorded another skipper species that remains unidentified and a few moths that can only be identified to genus based on my photographs. An overall assessment of the 87 species shows that 36 (41%) of them are endemic to Sulawesi (including satellite islands in some cases). This figure is remarkably close to the 43% endemism for butterfly species in the Sulawesi region (Sulawesi and its satellite islands) reported by Vane-Wright and de Jong (2003). If subspecies are considered, then endemism for the 87 taxa I recorded in N. Sulawesi jumps to 67 (66%). In addition to these endemic species and subspecies, a few widespread species were recorded including *Erionota thrax* (banana skipper or palm redeye), *Lampides boeticus* (pea blue or long-tailed blue), *Zizeeria karsandra* (dark grass blue), *Zizina otis* (lesser grass blue), *Hypolimnias bolina* (great eggfly or varied eggfly), *Hypolimnias misippus* (mimic, diadem or danaid eggfly) and *Danaus chrysippus* (plain tiger, African queen, or lesser wanderer) some of which are considered to be pest species and could have been inadvertently introduced through human activities. These

widespread species and their uncertain colonization routes partially cloud the overall picture of Lepidoptera endemism in Sulawesi (Vane-Wright and de Jong, 2003)

From my records, the butterfly groups with the highest level of endemism were the satyrinae with eight of 10 (80%) species endemic to Sulawesi and the charaxinae with two of two (100%) endemic species. Like some of Sulawesi's endemic mammal species (Musser, 1987; Musser *et al.*, 2010), some of the satyrine species are not only endemic to Sulawesi but also to certain regions within Sulawesi (Table 1). For example, *Lohora dexamenus* (Fig. 7) is endemic to N. and C. Sulawesi (Vane-Wright and de Jong, 2003). Although moths have been subjected to less detailed study than butterflies in Sulawesi, many moth species are also known to be endemic to Sulawesi (Table 1) including the distinctive and aposematically colored arctiid *Chionaema rubrifasciata* (Fig. 8), the brahmaeid *B. celebica* and the spectacular lunar moth *Argema isis* (treated as a subspecies of *Argema maenas* by some authors).



Fig. 8. The aposematically patterned endemic arctiid *Chionaema rubrifasciata*

Based on phenetic analyses, Holloway (1987b) found that the Sulawesi Lepidoptera fauna, especially the butterflies and notodontid and limacodid moths, has stronger affinities with the fauna of the Philippines than with that of Borneo, mainland SE Asia or Australasia. The data in Table 1 similarly reflect this trend to some extent. Also, Heppner (1989) recorded a total of 2,234 species of Lepidoptera in just one month of surveying in Bogani Nani Wartabone National Park (and 2,475 species for the northern peninsula of Sulawesi) which hints at the richness of the entire Sulawesi Lepidoptera fauna.

Clearly, much work remains to be done to describe new taxa, determine their endemism, evaluate relationships with other taxa and to decipher their origins.

I am grateful to the Committee for Research and Exploration of the National Geographic Society for funding my participation in Project Wallace, the Royal Entomological Society and the Indonesian Institute of Sciences (Lembaga Ilmu Pengetahuan Indonesia) for organizing the expedition, Don R. Davis (U.S. National Museum of Natural History, Washington DC) for identifying the tineid, and to Jeremy Holloway (Natural History Museum, London) for identifying some moths and confirming my identifications for others.

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TABLE 1. LEPIDOPTERA POSITIVELY IDENTIFIED IN LOWLAND TROPICAL RAIN FOREST IN SULAWESI UTARA, JAN-FEB. 1985, AND THEIR GEOGRAPHICAL DISTRIBUTIONS*

TAXON	GEOGRAPHICAL DISTRIBUTION
HESPERIIDAE	
<i>Erionota thrax</i> (Linnaeus)	Species very widespread in S. Asia & many Pacific islands
<i>Potanthus fettiingi nikaja</i> (Fruhstorfer)	Subspecies endemic to Sulawesi & some Moluccan islands; species widespread in the Indo-Australian archipelago

PAPILIONIDAE

- Graphium agamemnon comodus* (Fruhstorfer) Subspecies endemic to Sulawesi & satellite islands; species widely distributed from S. Asia to Australia
- Graphium androcles androcles* (Boisduval)* Subspecies endemic to Sulawesi; another subspecies occurs on Sula island in the Moluccas
- Graphium anthedon milon* (C. & R. Felder) Subspecies endemic to Sulawesi; 5 other subspecies recognized from various Moluccan islands
- Graphium dorcus dorcus* (de Haan)* Subspecies endemic to N. Sulawesi; a different subspecies occurs in C. Sulawesi; species endemic to Sulawesi
- Graphium encelades* (Boisduval)* Species endemic to Sulawesi
- Graphium eurypylus pamphylus* (C. & R. Felder) Subspecies endemic to Sulawesi; species widely distributed from SE Asia to Australia
- Graphium rhesus rhesus* (Boisduval)* Subspecies endemic to N., C. & SE Sulawesi; a different subspecies occurs in S. Sulawesi; species confined to Sulawesi & satellite islands
- Pachliopta polyphontes polyphontes* (Boisduval)* Subspecies endemic to N. Sulawesi & adjacent Sangihe islands; a different subspecies occurs in C. & S. Sulawesi; species confined to Sulawesi & a few Moluccan islands
- Papilio blumei blumei* Boisduval* Subspecies endemic to N. & C. Sulawesi; a different subspecies occurs in S. Sulawesi.; species endemic to Sulawesi
- Papilio gigon gigon* C. & R. Felder* Subspecies endemic to Sulawesi; 2 additional subspecies recognized from satellite islands
- Papilio sataspes sataspes* C. & R. Felder* Subspecies endemic to Sulawesi; 2 additional subspecies recognized from satellite islands
- Troides hypolitus cellularis* Rothschild Subspecies endemic to Sulawesi & adjacent Sangihe islands; species confined to Sulawesi & Moluccas
- Lamproptera meges ennius* (C. & R. Felder) Subspecies endemic to N., C. & SE Sulawesi; a different subspecies is recognized from S. Sulawesi; species ranges from mainland SE Asia to the Philippines & Sulawesi

PIERIDAE

- Appias paulina albata* Hopffer Subspecies endemic to Sulawesi & some adjacent Moluccan islands; species widely distributed from S. Asia to Australia & some Pacific islands
- Appias zarinda zarinda* (Boisduval)* Subspecies endemic to Sulawesi; 4 additional subspecies inhabit satellite islands; species endemic to Sulawesi & satellite islands
- Catopsilia scylla asema* Staudinger Subspecies endemic to Sulawesi & C. & S. Philippines; species distributed from SE Asia to Australia
- Catopsilia pyranthe pyranthe* (Linnaeus) Subspecies widely distributed in S. Asia; species extends eastwards to Australia & some Pacific islands
- Cepora celebensis* Rothschild* Species endemic to Sulawesi
- Eurema hecabe latimargo* (Hopffer) Subspecies endemic to N. & C. Sulawesi; species very widely distributed from Africa to Australia
- Eurema tominia tominia* (Vollenhoven) Subspecies endemic to Sulawesi; species occurs on Borneo, Sulawesi & a few adjacent small islands
- Hebomoia glaucippe celebensis* (Wallace) Subspecies endemic to Sulawesi & satellite islands; species distributed from S.Asia to the Philippines. Sulawesi, Lesser Sunda, eastern Moluccan nearby islands
- Saletara panda nigerrima* (Holland) Subspecies endemic to N. Sulawesi; species occurs in Malaysia, Sumatra, Java, Borneo, the Philippines, Sulawesi & other adjacent smaller islands

LYCAENIDAE

- Allotinus major* C. & R. Felder* Species endemic to Sulawesi & satellite islands
- Catochrysops strabo celebensis* Tite Subspecies endemic to Sulawesi & satellite islands; species widely distributed from SE Asia to the Australasian region
- Caleta caleta caleta* (Hewitson) Subspecies endemic to Sulawesi; species ranges from the S. Philippines to Sulawesi
- Discolampa ethion ulyssides* (Grose-Smith) Subspecies endemic to Sulawesi; species widespread from mainland SE Asia to the Moluccas

<i>Discolampa ilissus ilissus</i> (Felder)	Subspecies endemic to Sulawesi & adjacent Peleng island; species occurs on Sulawesi & some Moluccan islands
<i>Everes lacturnus</i> (Godart)	Species widespread from mainland SE Asia to Australia & the Solomon islands; the form on Sulawesi may represent a distinct subspecies (Vane- Wright and de Jong, 2003)
<i>Ionolyce helicon helicon</i> (Felder)	Subspecies endemic to Sulawesi & satellite islands; species widespread from Sri Lanka to Australia & New Guinea
<i>Jamides celeno optimus</i> (Röber)	Subspecies ranges from the Philippines to Sulawesi; species widespread from Sri Lanka to New Guinea and Vanuatu
<i>Jamides schatzi argentiferus</i> (Fruhstorfer)	Subspecies endemic to Sulawesi & adjacent Peleng island; species occurs on Sulawesi & some Philippine & Moluccan islands
<i>Lampides boeticus</i> (Linnaeus)	Species very widespread in the Afrotropical, Indo-Australain, Pacific & S. Palearctic regions
<i>Psychonotis piepersii</i> Snellen*	Species endemic to Sulawesi & some satellite islands
<i>Zizeeria karsandra</i> (Moore)	Species very widespread from Algeria east to Australia
<i>Zizina otis</i> (Fabricius)	Species widespread from mainland SE Asia to the Moluccas

NYMPHALIDAE**LIBYTHEINAE**

<i>Libythea geoffroy celebensis</i> Staudinger	Subspecies endemic to Sulawesi & adjacent Peleng; species ranges from mainland SE Asia to N. Australia & some Pacific islands
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MORPHINAE

<i>Amathuxidia plateni plateni</i> (Staudinger)*	Subspecies endemic to N. Sulawesi; species endemic to Sulawesi & 2 Moluccan islands
<i>Faunis menado menado</i> (Hewitson)*	Subspecies endemic to N. Sulawesi; species endemic to Sulawesi & a few satellite islands

SATYRINAE

<i>Elymnias mimalon mimalon</i> Hewitson*	Subspecies endemic to N. Sulawesi; 2 additional subspecies are recognized, 1 in C. Sulawesi, the other in SE Sulawesi
<i>Lohora deianira</i> (Hewitson)*	Species endemic to N. Sulawesi
<i>Lohora dexamenas</i> (Hewitson)*	Species endemic to N. & C. Sulawesi
<i>Melanitis leda celebicola</i> Martin	Subspecies endemic to Sulawesi; species very widespread from Africa to Australia
<i>Mycalesis itys itys</i> Felder*	Subspecies endemic to N. Sulawesi; a different subspecies occurs in the remainder of Sulawesi; species endemic to Sulawesi & 1 Moluccan island
<i>Mycalesis janardana opaculus</i> Fruhstorfer	Subspecies endemic to Sulawesi & adjacent Sangihe islands; species occurs in Malaysia, Sumatra, Java, Borneo, the southern Philippines & other adjacent smaller islands
<i>Orsotriaena jopas jopas</i> (Hewitson)*	Subspecies endemic to Sulawesi; species endemic to Sulawesi & 2 satellite islands
<i>Ypthima gavalisi</i> Martin*	Species endemic to Sulawesi
<i>Ypthima kalelonda kalelonda</i> Westwood*	Subspecies endemic to N. Sulawesi; species endemic to Sulawesi & satellite islands
<i>Ypthima nynias nynias</i> Fruhstorfer*	Subspecies endemic to Sulawesi; species endemic to Sulawesi & satellite islands

CHARAXINAE

<i>Charaxes affinis affinis</i> Butler*	Subspecies endemic to Sulawesi & Togian islands; species endemic to Sulawesi & some satellite islands
<i>Charaxes nitebis nitebis</i> (Hewitson)*	Subspecies endemic to Sulawesi; species endemic to Sulawesi & some satellite islands

BIBLIDINAE

<i>Cyrestis thyonneus celebensis</i> Staudinger	Subspecies endemic to Sulawesi; species ranges from Sulawesi to the central Moluccas
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<i>Dichorragia nesimachus pelurius</i> Fruhstorfer	Subspecies endemic to N. & C. Sulawesi; species ranges from India to the central Moluccas
<i>Lasippa neriphys tawayana</i> (Fruhstorfer)*	Subspecies & the 2 other recognized subspecies endemic to Sulawesi & satellite islands
<i>Lexius aetes</i> (Hewitson)*	Species including all 5 recognized subspecies endemic to Sulawesi & satellite islands
<i>Neptis ida</i> Moore*	Species including all 6 recognized subspecies endemic to Sulawesi & satellite islands
<i>Parthenos sylvia salentia</i> (Hopffer)	Subspecies endemic to Sulawesi; species widespread from mainland SE Asia eastwards to New Guinea & the Solomon islands
<i>Euthalia amanda amanda</i> Hewitson*	Subspecies endemic to Sulawesi & some satellite islands; species endemic to Sulawesi & several satellite islands

APATURINAE

<i>Rohana macar macar</i> (Wallace)*	Subspecies endemic to Sulawesi & satellite islands; species confined to Sulawesi, satellite islands & Buton
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NYMPHALINAE

<i>Junonia hedonia intermedia</i> (C. & R. Felder)	Subspecies endemic to Sulawesi & some satellite islands; species widespread from mainland SE Asia to New Guinea & Solomon islands
<i>Rhinopalpa polynice megalonice</i> Felder & Felder	Subspecies endemic to Sulawesi; species ranges from mainland SE Asia to Sulawesi
<i>Hypolimnas bolina</i> (Linnaeus)	Species very widely distributed from Africa, through southern Asia, Australia & some Pacific islands
<i>Hypolimnas misippus</i> Linnaeus	Species very widely distributed from the Caribbean & northern S. America xto the Afrotropical, Oriental & Australasian regions

HELICONIINAE

<i>Vindula dejone celebensis</i> (Butler)	Subspecies endemic to Sulawesi & adjacent Buton; species widespread from mainland SE Asia to the Moluccas
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DANAINAE

<i>Danaus chrysippus chrysippus</i> (Linnaeus)	Subspecies widespread from S. Europe & N. Africa to SE Asia; species very widespread from S. Europe to Australia & many Pacific islands
<i>Danaus genutia leucoglene</i> C. & R. Felder	Subspecies endemic to Sulawesi; species widespread from S. Asia to Australia
<i>Euploea algea kirbyi</i> C. & R. Felder	Subspecies endemic to N. Sulawesi; a different subspecies occurs in the remainder of Sulawesi; species ranges from mainland SE Asia to New Guinea, northern Australia & some Pacific islands
<i>Euploea westwoodii meyeri</i> Hopffer*	Subspecies endemic to Sulawesi; species endemic to Sulawesi & satellite islands
<i>Ideopsis juvena tontoliensis</i> (Fruhstorfer)	Subspecies endemic to N. Sulawesi; 2 different subspecies occur further south in Sulawesi; species present (as different subspecies) on almost all islands between mainland SE Asia & Australia
<i>Ideopsis vitrea vitrea</i> (Blanchard)	Subspecies endemic to N. Sulawesi; a different subspecies is recognized further south on the island; species occurs on Sulawesi, some Moluccan & western peninsula of New Guinea
<i>Parantica cleona luci-plena</i> Fruhstorfer	Subspecies endemic to Sulawesi & some satellite islands; 6 other recognized subspecies each endemic to various Moluccan islands to the east

AGANAIDAE

<i>Asota heliconia</i> Linnaeus	Species widespread from mainland SE Asia to Australia & the Solomon islands; 2 subspecies (<i>kalaonica</i> Rothschild & <i>lanceolata</i> Walker) are endemic to Sulawesi
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BRAHMAEIDAE

Brahmidia celebica (Toxopeus)* Species endemic to Sulawesi

CALLIDULIDAE

Tetragonus lycaenoides (Felder & Felder) Species known from peninsular Malaysia, Borneo, Sumatra, Nias & Sulawesi

GEOMETRIDAE

Tasta chalybeata Warren* Species endemic to Sulawesi

LYMANTRIIDAE

"*Euproctis*" *biplagiata* Walker * + Species endemic to Sulawesi

SATURNIIDAE

Argema isis Sonthonnax* Species endemic to Sulawesi

COSSIDAE

Xyleutes persona (Le Guillou) Species widespread from mainland SE Asia to New Guinea

TINEIDAE

Ischnuridea virginella Sauber Species known from Sulawesi & the Philippines

LASIOCAMPIDAE

Hallicarnia bidens (Zerny)* Species endemic to Sulawesi

NOLIDAE

Chora repandens Walker Species ranges from mainland SE Asia east to the Philippines, Sulawesi & Seram

ARCTIIDAE

Chionaema rubrifasciata (Druce)* Species endemic to Sulawesi
Cretonotos transiens (Walker) Species widespread from S. Asia through the Malay Archipelago to Sulawesi

Nyctemera baulus nigrovena Swinhoe Subspecies endemic to Sulawesi & satellite islands; species very widespread from mainland SE Asia through the Malay Archipelago to Australia & xSamoa

SPHINGIDAE

Acherontia styx medusa Moore Subspecies widespread from eastern continental Asia through the Malay Archipelago as far east as the Moluccas; species very widespread from SW Asia to the Moluccas

Theretra oldenlandiae (Fabricius) Species widely distributed from Japan through the Indo-Australian region to the Solomon islands

*Butterfly taxonomy follows Vane-Wright and de Jong (2003). Species endemic to Sulawesi (including satellite islands in some cases) are asterisked. Distributions listed are compiled from Collenette (1947), Etsuzo *et al.* (1982a,b, 1985), Holloway (1986, 1987a, 1988, 1993, 1998, 1999b, 2001), Holloway *et al.* (2001), Parsons (1999), Vane-Wright and de Jong (2003), Zolotuhin and Holloway (2006) and Holloway (personal communication).

+This species is retained in "*Euproctis*" until a taxonomic revision of Indo-Australian moths in this group is available (Holloway 1999a).

THE GENUS *DARGIDA* WALKER, 1856 (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY
VERNON ANTOINE BROU JR.

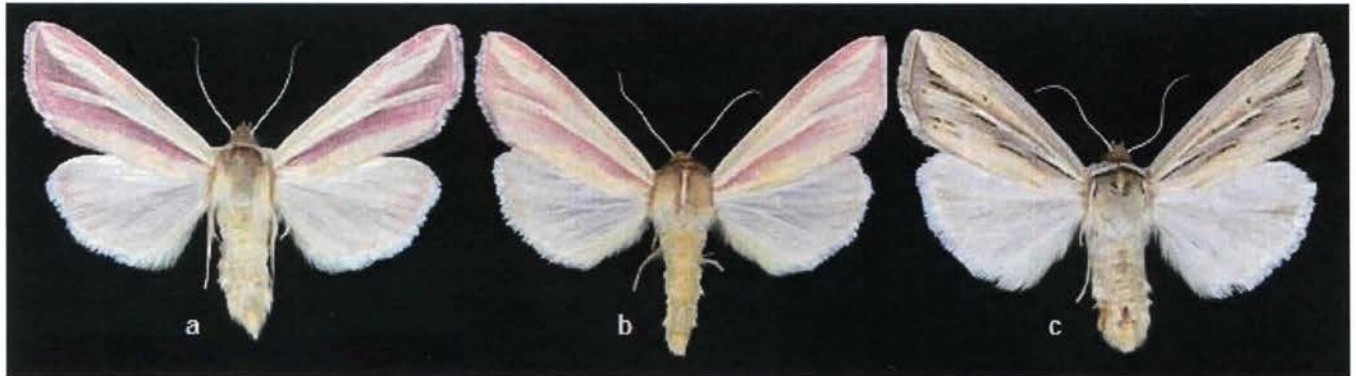


Fig. 1. *Dargida rubripennis*: a. male, b. female. *Dargida diffusa*: c. male.

The genera *Faronta* Smith, 1908 and *Strigania* Hampson, 1905 were synonymized under the genus *Dargida* Walker, 1856 by (Rodríguez and Angulo, 2005). In their revision, these authors listed 53 species of *Dargida*, creating fourteen new combinations and listing new records. In America, north of Mexico, eight species are

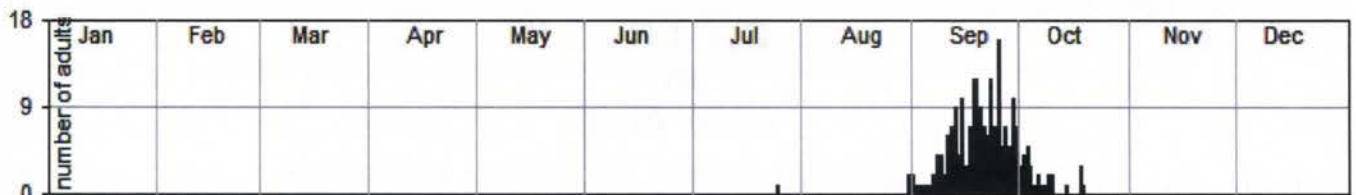


Fig. 2. Adult *D. rubripennis* captured at sec. 24T6SR12E, 4.2 mi. NE of Abita Springs, Louisiana. n = 212.

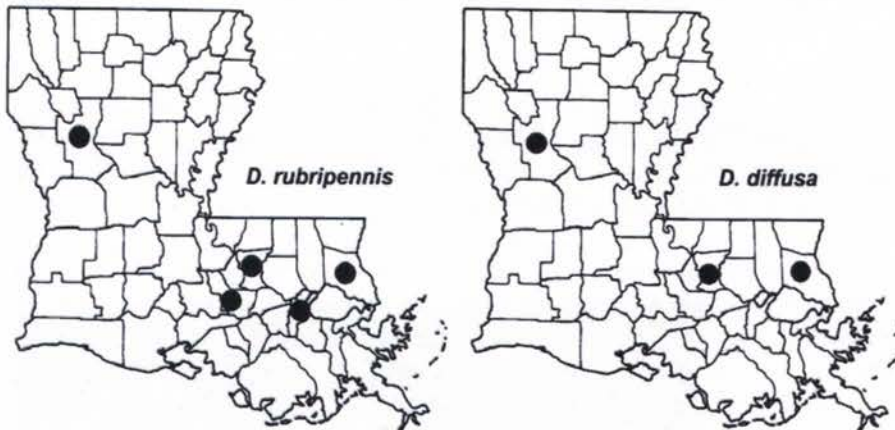


Fig. 3. Parish records for *D. rubripennis* and *D. diffusa* by this author.

separate occasions, once by Chapin and Callahan, and on three occasions (May and October) by this author. The type locality for *diffusa* is Nova Scotia, Canada. Covell listed the range for *diffusa* to include New Foundland to Virginia, west through Canada, south to Texas during the months of April through October in two to three broods.

Powell and Opler (2009) stated *diffusa* "wheat head armyworm" ranges through much of temperate North America, Northwest Territories and British Columbia eastward across Canada to Newfoundland and most of the United States, except for the southeast. These authors stated *diffusa* flies March to October in two to three broods.

D. rubripennis is the more abundantly captured species of *Dargida* within Louisiana, adults flying in one annual brood peaking third week of September (Fig. 2). The type locality for *rubripennis* is Texas, USA.

assigned to the genus *Dargida*. I have taken only two species of the genus in Louisiana: *Dargida rubripennis* (Grote & Robinson, 1870) (Fig. 1a,b) and *Dargida diffusa* (Walker, 1856) (Fig. 1c.). Both species were previously reported for Louisiana, with adults captured during the month of September using ultraviolet light traps (Chapin and Callahan, 1967).

Within Louisiana, four adults of *diffusa* were captured on four

Covell (1984), listed the range of *rubripennis* to include Massachusetts and Ontario to Florida, west to Minnesota and Texas for the months August to September.

Heppner (2003) listed two species of *Dargida* for the state of Florida: *D. rubripennis* and *Dargida quadrannulata* (Morrison). The type locality for *quadrannulata* is USA: Nebraska, Glencoe, Dodge Co.

The parish records for both species discussed are illustrated in Fig. 3.

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RIGHT ON CUE BY DAVID RUPE

Practically everyone has been in a situation where they are looking very hard for something; however, what they are looking for never seems to show up. When our attention moves to something else, and we are somewhat distracted, the object we are searching for will show up with no warning. The story below involves just the *opposite* of that.

During the summer of 2001, while working on my degree in Biology at Arkansas Tech University, I took a summer job as a biological technician on what was then the Buffalo Ranger District, Ozark National Forest. This District is now known as the Big Piney and has merged with the Bayou Ranger District further to the south. This area lies south of the Buffalo River, primarily in Newton County, Arkansas.

My primary duties included bio inventory, bird surveys, timber marking, wildlife stand improvements, and just about anything else that needed done around the District. It didn't take long for co-workers to become aware of my interest in Lepidoptera. During that summer, I worked with a fellow student from Arkansas Tech University who I knew quite well. His primary interest was Ornithology and to some degree forestry, however, he was constantly questioning me about insects and was himself somewhat interested in both Lepidoptera and Coleoptera.

On more than one occasion while riding to or from a project area, we would stop on a roadside and either net or simply observe butterflies. One of the early highlights of that season was showing him a fresh male Diana fritillary (*Speyeria diana*). In addition, several nice specimens of zebra swallowtail (*Eurytides marcellus*) also captured his interest.

One particular day while driving a long dirt road, I got on the subject of butterflies that were known to occur within or near the Ozark region that I had yet to see. I named off a few species, and began to talk about the Baltimore checkerspot (*Euphydryas phaeton*). Of course, I went on to explain its bright spots and bold color pattern and how nice it would be to see one. A few minutes later, my co-worker spotted several swallowtails nectaring on bee balm (*Monarda* sp.) and Joe-Pye weed (*Eupatorium* sp.). He insisted we stop so he could net a few and take a better look. I was not that keen on the idea, especially since I had seen my fair share of our local

swallowtail fauna. However, I stopped and he had a great time chasing both spicebush (*Papilio troilus*) and pipevine swallowtails (*Battus philenor*) along the roadside. While he was busy chasing swallowtails, I walked along the opposite side of the road, which was bordered by a fairly large area of private land, including a large pasture. As I walked along the road something flew down and settled right on the shoulder of the dirt road. I didn't get a real good look, so I approached slowly, not expecting anything rare. Much to my surprise, right in front of me was a Baltimore checkerspot. I immediately shouted to my co-worker to bring me the butterfly net, and he realized the excitement in my voice and came running. I advised him to approach me slowly and hand me the net. He did just that and I easily captured the somewhat worn specimen. My co-worker asked what all the excitement was about, and I asked if he remembered our conversation just prior to stopping the vehicle. His response was that he remembered me going on about some butterfly. I showed him the Baltimore checkerspot I had just captured and explained that this was the butterfly I was talking about and that I had never seen one before. He couldn't believe the coincidence and well, neither could I.

I collected the specimen, and it later became part of a collection that consisted of Lepidoptera of the Buffalo Ranger District. I later realized individuals in the Ozark region belong to a distinct subspecies, *Euphydryas phaeton ozarkae*, which made my specimen seem even more special.

I have tried to "will" several other rare species into my net since then with no such luck, but that won't keep me from trying.

(David Rupe E-Mail: dmrupe@att.net)

Note: Photographs of *Euphydrya phaeton ozarkae* can be observed in Craig Marks article on page 75 - The Editor

HOW TO TAKE BLURRY PHOTOGRAPHS

BY

MIKE RICKARD

The digital photography technological revolution has had far-reaching effects in many areas of our lives, and this is certainly true in butterfly fieldwork. The equipment can be inexpensive and easy to use, while producing very high quality photographs. Sometimes, however, results are less than spectacular. At least, mine are. Although the title and tone of this article are intended to be tongue-in-cheek, as I discuss several out-of-focus photos, the circumstances that caused them, and why I'm thrilled to have taken them anyway, I hope you'll find a bit of substance in each example.



Photo A: *Eurytides philolaus*

Photo A is a *Eurytides p. philolaus* (Boisduval, 1856), taken at Santa Ana NWR. During the 30-odd years that I carried a net, I was sometimes burdened with a variety of jars, bags, and *etc.* for collecting live females and immatures, and at other times carried an SLR camera and lenses. Most of the time, though, I had only my net, a small metal box of envelopes in my pocket, and I wore athletic shoes. On this day, how I wished I could turn the clock back! I had on a camera belt, with a 300mm lens in a pouch on one hip and my DSLR with 100mm macro lens on the other, binoculars across one shoulder, bottles of water in the cargo pockets of each pants leg, and was wearing heavy-duty hiking boots, not to be confused with running

shoes. Thus ruggedly equipped, I was prepared for anything...except chasing a Kite Swallowtail down a road. I had just started a long hike through the refuge when a *philolaus* came sailing over my shoulder - a

Life Bug for me! Photo A was the best of a dozen I took staggering down the road as fast as I could while firing away with one hand, until the *philolaus* outdistanced me. Thank goodness for autofocus lenses! Though this photo is far from award-winning quality, each time I look at it I relive the thrill of chasing an exotic swallowtail down a Texas road. And, as a footnote, I can now set up to travel much lighter in terms of gear and footwear, when I think I may need some footspeed.



Photo B: *Papilio astyalus*

Photo B is a female *Papilio astyalus pallas* (G Gray, 1853), ovipositing on *Esenbeckia runyonii* (Morton). This is a dimorphic species and while I'd seen several of the striking tailless females flying about, none had given me a photo opportunity (trying to chase them had much worse results than with the *philolaus*). Because of the tree's height, I used the 300mm lens. The butterfly was moving in and out among the branches too much for the autofocus to work so I switched to manual focus but just couldn't focus fast enough. Suddenly the *astyalus* popped out to a branch that gave me a wide-open view, but I still was too slow to focus, with the result you see. Had I been more skilled with the lens, and quicker at thinking and anticipation, I would have been able to switch the lens between focusing modes much faster and been more adept in either mode. After all, I know photographers who take excellent wing-shots of fast-moving butterflies and dragonflies. But again, when

your butterfly collection is a photographic one, you take what you can get, and I'm very happy with my blurry image of a rare swallowtail. But I am also practicing using my camera and lens in various possible scenarios requiring quick camera movements, burst shooting, and rapid focusing. Fortunately, digital photography makes practice free, unless you count the emotional cost of frequent use of the Delete key.



Photo C1: *Papilio polyxenes*



Photo C2: *Papilio polyxenes*

Photos C1 and C2, of a male *Papilio polyxenes asterius* (Stoll, 1782), arose from a bit different situation. I was photographing butterflies along the landscaped outer wall of a gated community, when I noticed that each of the one-and-one-half story homes along that wall had a *polyxenes* "roof-topping". I have seen many hill-topping butterflies, but this was a completely new experience for me. Each butterfly followed a classic pattern – they would angle up the slope of the roof until they reached the ridge, then sail out and downward to eave level, then loop back again. When they encountered each other there'd be a brief tangle, then they'd go back to their respective roofs. I watched for quite a while and tried to document this with a long series

of photos using the 300mm lens. I first tried both auto and manually focusing on the butterfly itself, with poor results. I eventually settled for locking the focus on a general area of the roof peak, but it was still a matter of luck whether I got a viewable butterfly or not. In later visits to this spot male polyxenes were still about, but no longer "roof-topping". Perhaps they discovered female *polyxenes* don't visit rooftops?

All photos were taken in Hidalgo Co., TX. Equipment used was a Canon 40D DSLR, with Canon EF100mm f/2.8L macro and EF300mm f/4L telephoto lenses.

(Mike Rickard, Texas Lepidoptera Survey. E-Mail: folksinger4@yahoo.com)

MISSISSIPPI, THE NATCHEZ TRACE AND AN OZARK BUTTERFLY BY CRAIG W. MARKS

In Mississippi, the Natchez Trace Parkway stretches from the southwest corner of the State at Natchez to the northeast corner, above Tupelo. It then continues across the northeast corner of Alabama into Tennessee, ultimately ending around Nashville. The Trace, part of the National Park Service, is a two-lane scenic roadway which runs over the approximate route of the original Trace. From the late 1700's through about 1810, this historic route was used by early American merchants, shippers and travelers to return to the interior of our new Nation after having floated the Mississippi River (then, the effective western border of the country) down to the New Orleans area.

But this article is not about the history of the Trace. It is about some of the butterflies, with one in particular, that I've come across while traveling the Trace in Mississippi. Specifically, the Trace has given me access to several areas where I was able to see butterflies not previously experienced. My first views of a Little Metalmark (*Calephelis virginensis*) and a Creole Pearly-eye (*Enodia creola*) were on the Trace just a few miles north of Natchez. The first Falcate Orangetip (*Anthocharis midea*) I ever saw was also on the Trace, less than one mile south of the Clinton entrance/exit.

When I joined the SLS in late 1994, one of the first things I did during that winter was contact the state coordinators in Mississippi and Arkansas to inquire about where I might see certain butterflies reported as flying in those states. At the time, Bryant Mather was that person in MS, and he became a wealth of information, guiding me to spots or people in an effort to assist my efforts to find several species I had not previously seen. In fact, it was he that sent me to the Trace exit at Clinton in March of 1996 to see that first Orangetip.

One of my initial inquiries to Bryant was about the possible presence of Baltimore Checkerspots (*Euphydryas phaeton*) in MS, reported by Opler to be in northeastern Mississippi. To my pleasure, Bryant advised that while he had not seen it within the State, Charles Bryson had reported catching "quite a few" of the *ozarkae* subspecies in Webster County in May and June between 1971 and 1973. He also provided me with contact information for Charles.

A uniquely colored butterfly, unlike any other in the east, it got its common name because its colors matched the family colors of Lord Calvert, the first Baron of Baltimore. In fact, Maryland has made it the state insect. The color scheme is reported to be a warning of toxicity to potential predators associated with the ingestion of chemicals by the caterpillar feeding on the main foodplant in the north, Turtlehead (*Chelone glabra*).

Primarily found in the east, it ranges from Maine to north Georgia, west to Minnesota and south to east Texas. Pelham reported two subspecies (*phaeton* and *ozarkae*). Masters first described *ozarkae* in 1968 as from the Ozark area (Missouri, Arkansas, Oklahoma and Kansas). He noted the use of a completely different habitat (dry hillsides), different foodplant (*Aureolaria*), earlier flight period (May to June) and a shorter flight period (10-14 days). He also described differences in maculation (paler and smaller red spots, more white). Based on these differences, he concluded, "it seems desirable to designate a new subspecies."



Baltimore Checkerspot (*Euphydryas phaeton ozarkae*), dorsal view, Webster County, MS (May, 19, 2002)

However, Cech and Tudor have referenced recent studies that failed to support any real distinction between the populations in the north and those in the Ozark region. Further, Glassberg reported that "Ozark-like", upland populations are now known from New England and New York. Shull, citing Klots, opined that "these poorly differentiated subspecies are really statistically gradations in a cline."

Beyond the four states identified by Masters, *ozarkae* has been reported from Indiana (Shull), Illinois (Sedman and Hess), Iowa (Schlicht, Downey and Nekola), East Texas (Neck), and, as previously noted, Mississippi (Mathers).

Anyway, during the winter of 1996 I contacted Charles who was equally as helpful as Bryant had been. Charles provided me with maps from the Mississippi State Highway Department, reflecting four locations (Grenada, Lee, Tishomingo and Webster Counties) where he had seen the bug. The most promising appeared to be a spot in Webster Co., near Maben on

Highway 15, just north of its intersection with Hwy 50 where he reported having seen hundreds in the early 1970's, including approximately 40 in one day on New Jersey Tea (*Ceanothus americanus*) plants along the road.

With his map, dates and directions, my fiancée (now my wife) and I set off on June 1, 1996, a long six hour drive from Lafayette, the last two hours driven on the Trace north from Jackson. I found the spot easily. There were Spicebush Swallowtails (*Papilio troilus*) and Eastern Tailed Blues (*Everes comyntas*) flying, along with numerous Little Wood Satyrs (*Megisto cymela*) and one Georgia Satyr (*Neonympha areolata*), but, alas, no Baltimores. The New Jersey Tea was past blooming, and I concluded I had arrived too late.

It took six years to get back, but I finally made it on May 19, 2002. To my utter disappointment, I found no Baltimores on the side of Hwy 15 Charles had marked on the map he had sent me. After several hours of fruitless searching, I decided to cross the road and check the other side. As I walked along a hunter's road, I saw a large Sweetspire bush (*Itea virginica*) in full bloom. As I approached, I could see "big as Dallas" a female on a cluster of the small white flowers. She had a portion of her right upper wing missing but otherwise she appeared fresh, so the search was on.

There were no other Baltimores nectaring on the flowers of the bush (but there were several Painted Ladies [*Vanessa cardui*] and one Mourning Cloak [*Nymphalis antiopa*]), so I had to expand my search. About an hour later, after I had veered off another hunter's trail, down a slope toward a creek in the bottom of a ravine, I found several males patrolling. I ended up finding nine in an area of about 25 yards by 25 yards, but nowhere else.



Baltimore Checkerspot (*Euphydryas phaeton ozarkae*), ventral view, Webster County, MS (May 19, 2002)

These bugs fly and act very similar to Silvery Checkerspots (*Chlosyne nycteis*), a close relative and a bug with which I am familiar from several locations in the Lafayette area. Both are colonial, when you find one, chances are good you will find more. Like the Silvery Checkerspot, unless disturbed, the flight is slow and leisurely. The males fly less than a foot over the groundcover in a flap and glide fashion, flying back and forth in what was clearly a patrolling action. The females perch on low growing leaves and are easily approached.

I found it perplexing that there were so few nectar sources in the immediate area where the males were patrolling, with no New Jersey Tea as the groundcover was much too thick. In fact, walking in the area was not easy due to many blackberry briars. I assumed the bug's foodplant was

present, but since I was looking for turtlehead and not something else, I never specifically identified what was attracting the males.

I was surprised by the nature of the area they were flying as it was nothing like what I expected. With limited resources available to me at the time, the bulk of my research had me looking for the type of wet, marshy habitat frequented by *phaeton*. Where I ultimately found *ozarkae* was dry and disturbed, on the side of an inclined slope, in an area of secondary growth with mixed hardwood and pine trees.

I've since expanded my library significantly to include Harris' Georgia book. At page 272, he commented that, "Instead of being collected in boggy areas where the usual foodplant, Turtlehead, might occur, the females were found mostly in open stands of mixed hardwoods on hillsides." Harris listed the subspecies from Georgia as *phaeton*, and, in fact, didn't mention *ozarkae* at all; however, he did reference a 1930 publication on the butterflies of the Ozark Region, noting the colonies there were found on *Gerardia* "high up on dry, thinly wooded ridges." He wondered why in Georgia females had been found on hillsides and not in boggy areas as in the north, and then concluded that further study is needed to determine the food plant for this bug in Georgia.

According to LeGrand, false-foxgloves (*Aureolaria* = *Gerardia*), "usually found in dry to mesic wooded areas," are suspected as the foodplant in Georgia, but then he added that "weedy plantains (*Plantago* spp.) are foodplants in some northern states," and might be used by certain populations in North Carolina. Glassberg also identified



Baltimore Checkerspot (*Euphydryas phaeton phaeton*), dorsal view, Beltrami County, MN (July 12, 2003)



Baltimore Checkerspot (*Euphydryas phaeton phaeton*), ventral view, Beltrami County, MN (July 12, 2003)

English plantain (*P. lanceolata*) as a foodplant without mentioning false-foxgloves. Shull suggested the "most consistent way of separating the nominate subspecies from . . . *ozarkae* seems to be the larval foodplant," but that statement is hard to reconcile with the full picture. Where does the use of plantain fit into the split between *phaeton* and *ozarkae*?

I've also obtained the Heitzmans' book on Missouri butterflies. Consistent with Masters, they identify the bug in that state as *ozarkae*, indicating that it is locally abundant in the eastern Ozarks. Females are reported to deposit their eggs on *Gerardia* "which serve as the larval food until hibernation." The following spring, "a wide range of shrubs and herbaceous plants" are used. The species is "found mostly in and near dry forests."

Members of the family *Aureolaria*, commonly known as false foxglove, are widespread over the eastern United States. Only Masters (*A. grandiflora*) and Cech/Tudor (*A. laevigata*) identified a specific species as the larval foodplant for *ozarkae*; the rest just generically reference false foxgloves. Members of the snapdragon family, they can be recognized by their full-tubed, bell-shaped golden/yellow flowers with five wide-spreading lobes. They are reported as parasitic on roots of oaks.

Smooth false foxglove (*A. laevigata*) grows from Pennsylvania to Georgia, west to Tennessee and Ohio. Downy false foxglove (*A. virginica*) is very similar to Smooth false foxglove and grows in the east, south to northern Florida, west to Louisiana and north to Michigan. The Large flower yellow false foxglove (*A. grandiflora*) grows west of the Mississippi River.

I returned to Webster County one year later on May 17, 2003, but it was rainy. While there were multiple New Jersey Tea plants in bloom along the highway, there was literally nothing

flying. All I saw were a few Eastern Tailed Blues, one American Lady (*V. virginensis*) and four Carolina Satyrs (*Hermeuptychia sosybius*). I had been thwarted again by the uncertainties of nature.

My next experience with this bug was in Minnesota on July 12, 2003, and involved *E. p. phaeton*. There, south of Bemidji on County Road 2, I found two males and one female patrolling back and forth along the road in a low, open area with standing water and turtlehead growing. There were also Eyed Browns (*Satyroides eurydice*) and Acadian Hairstreaks (*Satyrium acadica*) in the same immediate area. As the pictures reflect, *phaeton* is somewhat smaller and brighter than *ozarkae*. While the habitat differed radically from that in Mississippi, my impression was that the flight and behavior were the same.

More recently, I had seen some reports from Ricky Patterson, the current Mississippi SLS State Coordinator, of other locations within that state where Baltimores had been found. Through e-mail, Ricky described it as "a spotty bug, often in a place a year or two and then they disappear." Two localities he described were in the Calhoun County Wildlife Management Area near Bruce, Mississippi, and the Chickasaw County Wildlife Management Area near Houston, MS. The Calhoun population was located a few miles east of the headquarters, but he noted it was declining last time he was there.



Baltimore checkerspot (*Euphydryas phaeton ozarkae*), Chickasaw County, MS (May 14, 2010).

He identified the colony at Chickasaw WMA as the better place to investigate. With Ricky's directions, my Dad and I drove from Memphis on May 14, 2010, southeast to Tupelo, then south on the Natchez Trace toward Houston. Just beyond the Davis Lake exit, we turned right on County Road 119, then drove back northward until that road intersected with CR 118. We turned west on CR 118 and drove until it connected with CR 115. There was a parking area for turkey hunters at that intersection so we stopped, parked and walked back east on 118, backtracking down to the bottom of a hill and around a large sweeping curve. The road then starts a fairly long gradual incline. There is what appears to be an old power line cut on the south side of the road, and

in that general area we saw 4 Baltimores (two males, two females) along the road. Three of the four were actually sunning on the red dirt road (see picture). All were seen between 11:00 and 12:00. We stayed in the area until 2:00 and saw a total of 27 species, including six Great Spangled Fritillaries (*Speyeria cybele*).

Unfortunately, even though I knew to look for false foxglove plants and what they should look like, I found nothing that matched the pictures I have seen. Certainly, there was nothing in bloom with flowers that matched. Other than the immediate roadsides, the area was wooded, with heavy secondary growth, making it difficult to walk more than a few feet off of the road.

Kilian Roever reported *ozarkae* from Tishomingo State Park, Tishomingo County, on May 21, 2009, on the Mississippi-Alabama border, in northeast MS (See TLS 2010 Season Summary). Returning to the initial thread of this article, I would note a common link between the sites near Maben, in Chickasaw WMA and in Tishomingo State Park. Specifically, the Natchez Trace runs within a couple of miles of all three. Chickasaw is about 20 miles north of Maben, with Tishomingo 30 miles beyond Chickasaw.

The connection seems clear to me. As it bisects northeast Mississippi, the Trace cuts through the perfect habitat for *ozarkae*, dry, hilly open forests made up of a combination of hard wood and pines. There are numerous small streams and open areas in various stages of secondary growth. The area remains very rural. Hunting (deer, turkey, squirrel, etc.) is a significant industry in the region thereby minimizing habitat destruction. Along with some other butterflies at the southern fringe of their territory such as the Brown Elfin (Mather) and Mitchell's Satyr (TLS 2003 Season Summary), the *ozarkae* subspecies of the Baltimore Checkerspot has managed to gain and maintain a foothold in this region.

The speed limit on the Trace is 55 miles per hour (strictly enforced). If time allows, slow down and take the Trace through Mississippi rather than Interstate 55. Stop at some of the numerous designated "pull-offs" to not only track the history of the Trace and our young Country, but also to check out the butterflies that continue to inhabit this part of Mississippi. You just might be surprised at what you find.

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



Poanes viator nectaring on pickerel weed, McIntosh Co., GA (Photograph by Lance Durden)

This photograph accompanies the article by John A. Hyatt and Lance A. Durden on page 47 - "Skippers and Hairstreaks on the Coast of Georgia, Late Spring 2010."

CATOCALA ANDROMEDAE GUENÉE, 1852
(LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY
VERNON ANTOINE BROU JR.



Fig. 1. *Catocala andromedae* Louisiana phenotypes: males (a-k), females (m-v)

The small black underwing moth *Catocala andromedae* Guenée (Fig. 1) is fairly common at some locations within Louisiana. This species in the past has also been known as *Catocala tristis* Edwards, this name relegated to synonymy as *tristis* was described twelve years later in 1864.

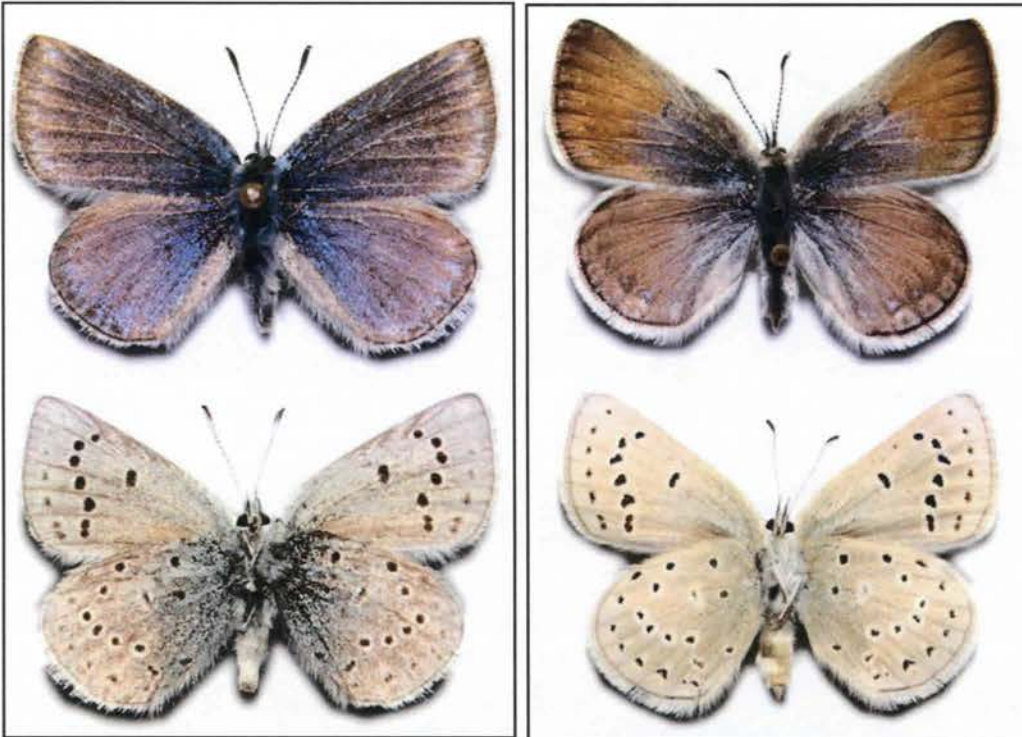
Barnes and McDunnough (1918) apparently knew very little about *andromedae*, as they covered this species using four sentences. These authors mentioned only a single Missouri specimen and several other specimens from Texas stating "concerning the authenticity of these [Texas specimens] ... we know nothing".

I had intended to display four specimens in this article to illustrate phenotype variation until I closely looked over my series of specimens and noticed so very many examples illustrating diverse forewing maculation. I have illustrated 10 males and 10 females (Fig. 1).

MISSION BLUE REINTRODUCED TO TWIN PEAKS

BY

J. BARRY LOMBARDINI



Plebejus icarioides missionensis Hovanitz, 1937 (Boisduval's Blue), ♂, San Guadalupe Parkway, San Bruno Mountains, San Mateo Co., California, 9-V-1976 [© Jim P. Brock]

Plebejus icarioides missionensis, ♀, San Guadalupe Parkway, San Bruno Mountains, San Mateo Co., California, ex larva 09-V-1976, emerged 19-V-1976 [© Jim P. Brock]

As I have mentioned in a previous issue of the Southern Lepidopterists' NEWS ⁽¹⁾, I grew up in San Francisco and while residing there collected butterflies for a number of years. Unfortunately, the Xerces Blue (*Glaucopsyche xerces*) was declared extinct by 1944 when I was only 3 years old. The last Xerces Blue was reported to be seen in San Francisco either in 1941 or 1943.

On the other hand the Boisduval's Blue or the subspecies, the Mission Blue (*Plebejus icarioides missionensis*), in the San Francisco area lasted a few more years until approximately the 1980's.

And fortunately, it is still found in the San Bruno Mountains and the Marin Headlands while having vanished in the Twin Peaks' area in San Francisco due to habitat destruction. (The San Bruno Mountains are situated in northern San Mateo County, California, and are the northernmost part of the Santa Cruz Mountains. The Marin Headlands are a hilly area at the southernmost end of Marin County, California, just north of the Golden Gate Bridge. The Headlands are located just north of San Francisco, immediately across the Golden Gate Bridge. The entire area is part of the Golden Gate National Recreation Area.)

The first stage of the reintroduction journey began with the establishment of the larval food plant of the Mission Blue on Twin Peaks. [More complete story is reported in the San Francisco Chronicle ⁽²⁾.] This consisted of City volunteers planting three species of lupines [Lindley varied lupine (*L. variicolor*), Silver lupine (*L. albifrons*), and summer lupine (*L. fimosus*)] on this famous hill of San Francisco.

The second stage of the reintroduction journey began in May of 2009 when a number of female Mission Blues were captured in the San Bruno Mountains and transported to Twin Peaks. Obvious plan was to have the females lay their eggs and start a new cycle of life in one of their formal ancestral homes.

Initial success was declared a year later on May 6, 2010, when one Mission Blue was seen flying. Whether this success continues remains to be seen but at least it is a start.

Acknowledgements

The Editor thanks Hank Leabee for alerting me to this story on the reintroduction of the Mission Blue to Twin Peaks in San Francisco. Also thanked are Mr. Jim P. Brock and Butterflies of America ⁽³⁾ for allowing the Southern Lepidopterists' Society to use the photographs of the Mission Blue.

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<<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/05/06/BA5O1DAK8A.DTL>>
- 3) Butterflies of America. <<http://www.butterfliesofamerica.com/>>

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

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

Charlie sends in the following Florida Report:

Punta Gorda, Charlotte County, Florida unless noted otherwise.

Reported by Mark DeGrove; markdegrove@yahoo.com:

1/12	<i>Holomelina laeta</i>		<i>Papilio polyxenes asterius</i>
	<i>Apantesis phalerata</i>		<i>Junonia coenia</i>
1/14	<i>Prionoxystus robiniae</i>		<i>Eurytides marcellus floridensis</i>
1/20	<i>Polites vibex</i>		<i>Utetheisa bella</i>
	<i>Hylephila phyleus</i>		<i>Halysidota tessellaris</i>
	<i>Hemiargus ceraunus antibubastus</i>		<i>Xylophanes tersa</i>
	<i>Urbanus proteus</i>	3/27	<i>Thorbes pylades</i>
	<i>Junonia coenia</i>		<i>Papilio cresphontes</i>
	<i>Atalopedes campestris</i>		<i>Eurytides marcellus floridensis</i>
	<i>Papilio polyxenes asterius</i>		<i>Apantesis vitatta</i>
	<i>Euphyes vestris</i>		<i>Apantesis phalerata</i>
	<i>Ascia monuste phileta</i>		<i>Phrygionis argentata</i>
	<i>Pyrgus communis</i>	3/28	<i>Sierarctia echo</i>
	<i>Eurema daira daira</i> (winter form)		<i>Zale lunata form edusa</i>
	<i>Lerodea eufala</i> (tentative ID)		<i>Cosmosoma myrodora</i>
	<i>Furcula cinerea</i>		<i>Holomelina rubicundaria</i>
2/21	<i>Eurema daira daira</i>		<i>Utetheisa ornatrix</i>
	<i>Junonia coenia</i>	3/31	Desoto County, Hull, FL:
	<i>Eurytides marcellus floridensis</i>		<i>Papilio palamedes</i>
	<i>Utetheisa ornatrix</i>		<i>Papilio (Pterorou) glaucus australis</i>
2/22	<i>Eurema lisa</i>		<i>Pterorou fakahatcheensis/troilus</i>
3/10	<i>Danaus gilippus berenice</i>		<i>Vanessa virginiensis</i>
	<i>Junonia coenia</i>		<i>Utetheisa ornatrix</i>
	<i>Eurytides marcellus floridensis</i>		<i>Amphion floridensis</i>
3/19	<i>Anthereaea polyphemus</i>		<i>Sierarctia echo</i>
3/20	<i>Vanessa atalanta rubria</i>		

First sightings of butterflies Covell's yard, 207 NE 9th Ave., Gainesville, FL, 2010

- | | |
|--------------------------------------|--|
| 1. <i>Phoebus sennae</i> | March 14, nectaring on front yard azalea |
| 2. <i>Papilio polyxenes asterius</i> | April 1, flying over the house |
| 3. <i>Polites vibex</i> | April 1, female resting in back lawn |
| 4. <i>Junonia coenia</i> | April 14, flying and lighting in viburnum blossoms |
| 5. <i>Libytheana carinenta</i> | April 15, nectaring in viburnum trees |

6. <i>Polygona interrogationis</i>	April 16, nectaring in viburnum trees
7. <i>Atlides halesus</i>	April 16, nectaring in viburnum trees
8. <i>Limnitis arthemis astyanax</i>	April 17, briefly resting by garage door
9. <i>Danaus plexippus</i>	April 18, female flying in back and front yards
10. <i>Parhassius m-album</i>	April 19, nectaring high in viburnum trees
11. <i>Agraulis vanillae</i>	April 24, flying beside tool shed
12. <i>Epargyreus clarus</i>	April 26, at back of tool shed in front yard
13. <i>Calycopis cecrops</i>	May 9, resting on a bush in the back yard
14. <i>Heraclides crespontes</i>	May 15, flying in back yard
15. <i>Erynnis horatius</i>	May 16, resting in the back yard lawn
16. <i>Papilio troilus</i>	May 22, flying across our yard
17. <i>Strymon melinus</i>	June 10, perching near the Bougainvillea
18. <i>Papilio glaucus</i>	June 12, flying near the fish pond
19. <i>Papilio palamedes</i>	June 13, flying in back yard

Covell's other Gainesville area records include: March 24: *Estigmene acrea* (Arctiinae); March 26: *Heraclides crespontes*, *P. glaucus*, and *Phoebis sennae*; March 27: *Givera* sp., *Euclea delphinii*, *Metarranthis obfirmaria*, *Euchlaena pectinaria*, *Virbia aurantiaca*, *Cisthene* sp., *Apantesis* sp. (*phalerata* ?), *Acronicta* sp., *Morrisonia confusa*, *Zale calycanthata*, *Nadata gibbosa*, *Renia* sp.; March 31: *Psychomorpha epimenis* (Noctuidae), *H. crespontes*; April 2: *Erynnis horatius* (on white clover blossoms), *Papilio troilus*, *Heraclides crespontes*, *Phoebis sennae*, *Eurema nicippe* and *Vanessa atalanta*; April 3, *Papilio troilus*; April 5: *H. phyleus* (on wild radish), *Pyrgus oileus*, *E. marcellus*, *P. sennae*, *E. lisa*, *C. cecrops* and *P. phaon*. I also saw a dayflying noctuid moth, *Alypia* sp; April 7: *H. phyleus*, *P. troilus*, *V. atalanta* and *J. coenia*; April 9: *P. palamedes*, *P. sennae* and *V. atalanta*; April 10: *P. troilus*, *P. palamedes*, *H. crespontes* and *V. atalanta*; April 15: *H. crespontes*, *L. carinenta*; April 16, *Atlides halesus* and *P. interrogationis*; April 21: *L. carinenta* and *J. coenia*; April 23: *P. palamedes*, *J. coenia*; April 24: *A. vanillae*; April 26, *Epargyreus clarus*; May 7: *H. phyleus*, *E. nicippe*, *V. virginicensis* and *J. coenia*; May 8: *Wallengrenia otho otho*, *E. nicippe*, *V. atalanta*, *J. coenia* and *A. celtis*; May 9: *Atlides halesus*, *C. cecrops* and *J. coenia*; May 10, *P. sennae*; May 11: *Erynnis horatius*, *H. phyleus*, *J. coenia*, and *Asterocampa clyton*; May 15: *E. horatius*, *W. otho otho*, *P. troilus*, and *J. coenia*.

Covell reported the following along Shell Mound Road, Lower Suwannee NWA, DeSoto Co., April 11: *Polites vibex*, *P. glaucus*, *P. troilus*, *P. palamedes* (dominant species), *P. sennae*, *Calephelis virginicensis*, *P. tharos*, *P. phaon*, *L. archippus* "floridensis", *H. sosybius* and *M. cymela*; April 5: *H. phyleus* (on wild radish), *Pyrgus oileus*, *E. marcellus*, *P. sennae*, *E. lisa*, *C. cecrops* and *P. phaon*. also *Alypia* sp. (Noctuidae);

On April 16, Covell recorded the following in Suwannee Co., Episcopal Camp Weed near Houston: *E. Marcellus*, *M. cymela*, *H. sosybius*; *A. luna*, *A. polyphemus*, *A. io*, *Dryocampa rubicunda*, and *C. sepulcralis* (plus a number of other moths not yet identified and recorded).

April 30 and May 1, at a "BioBlitz" at Biscayne National Park, Covell, Marc Minno, Alana Edwards, Suzanne Koptur, Julieta Brambila, Sandy Koi and Akers Pence recored the following on Elliott Key: *Battus polydamas*, *Heraclides* sp. (probably *crespontes*), *Phoebus agarithe*, *Ascia monuste*, *Chlorostrymon simaethis*, *Electrostrymon angelia*, *Leptotes cassius*, *Agraulis vanillae*, and *Dryas iulia*. Moths included *Tortyra slossonaria* (Choreutidae), *Cautethia grotei* (Sphingidae), *Megalopyge opercularis* (Megalopygidae), *Composia fidellissima* (Arctiidae), and *Ascalapha odorata* (Noctuidae).

Alana Edwards reported a *Strymon martialis* on May 21 in her yard at Boca Raton.

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

The contributors include James Adams (JA or no notation), Irving Finkelstein (IF), and Eleanor Adams (ERA). Other contributors are spelled out with the appropriate 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 dates listed below are 2010 unless otherwise specified.

An unusually cool January and February prevented much sampling for the early spring. A sudden rise in

temperatures in late March and early April saw an explosion of moth activity, particularly *Cissusa spadix* in NW GA. Also remarkable was the diversity of *Zale* species (see Taylor's Ridge and Gates Chapel Rd records, below). In May and into early June there was an incredible abundance of Satyrium hairstreaks – Banded (*Calamus falacer*), Lined (*liparops*), and even several reports of Northern Oak (Ontario) and King's (specific King's and Oak hairstreak records are included below). Several reports were received from people who saw hundreds if not thousands in single-day outings, and several hairstreak specimens in moth light traps at night was not unusual this year, either. Also ridiculously abundant in May were the Anglewings - Question Marks and Commas (*Polygonia interrogationis* and *comma*).

Ringgold, Catoosa Co., GA, David Hollie, May 24, 2010:

HESPERIIDAE: *Autochton cellus*. **NYMPHALIDAE:** *Euphydryas phaeton*. David reports both are new to his yard, and both are possible new county records. Nice finds!

Pigeon Mountain (west side), the "Pocket area", 8 miles WSW of LaFayette), Walker Co., GA, with ERA, Nelson Dobbs, Mark Walker:

I (JA) visited the area no less than six times between April 4 and May 10, specifically looking for *Erora laeta* (the Early Hairstreak), which is sporadically recorded here in the spring but had escaped me (except for a dead female floating in a pond) in the 20 years I've been here. *Erora laeta* was absent EXCEPT for the visit on April 18 (with Mark Walker), when we encountered TWO individuals. I am convinced that the species could probably be seen here every year, but only if a concerted effort is made. If I had not gone on the 18th of April, my experience would have been the same as every other year.

A lot of the typical Spring butterflies/moths were common here, but some of the most interesting are below. **LYCAENIDAE:** *Incisalia henrici*, unusually common throughout April; *Erora laeta* (2; April 18). **NYMPHALIDAE:** *Polygonia interrogationis*, hundreds, May 10. **PIERIDAE:** *Pieris virginianensis*, middle two weeks in April, including April 18 -- Mark Walker had not seen this butterfly for a couple of decades. **NOCTUIDAE:** *Alypia octomaculata*, unusually common, especially April 18.

Calhoun, Gordon Co., GA:

NOCTUIDAE: *Acrionicta oblongata*, April 6; *Lithophane signosa*, Mar. 6.

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

SPHINGIDAE: *Manduca jasmineearum*, June 7. **NOCTUIDAE:** *Acrionicta* (formerly *Merolonche*) *dollii*, April 5.

Taylor's Ridge line, Co. rd. 250, N of hwy. 136, 5 mi. W of Villanow, Walker Co, April 2-3:

April 2-3:

GEOMETRIDAE: *Orthofidonia flavivenata* (VERY fresh), *Ceratomyx satanaria* (30+ specimens). **DREPANIDAE:** *Euthyatira pudens*. **EREBIDAE:** *Zale galbanata*, *Z. lunata*, *Z. minerea*, *Z. aeruginosa*, *Z. bethunei*, *Z. duplicata*, *Z. squamularis*, *Z. obliqua*, *Z. metatoides*, *Z. metata*, *Z. helata*, *Z. lunifera*, *Z. calycanthata*, *Z. unilineata*. **NOCTUIDAE:** *Acrionicta* (formerly *Merolonche*) *dollii* (3 specimens); *Feralia major* (LATE); *Pyreferra hesperidago* (3 specimens; LATE).

May 14-15:

EREBIDAE: *Hypena abalienalis*, *Zale horrida*, *Z. undularis*, *Metria amella* (very few from north GA), *Grammia figurata*. **NOLIDAE:** *Nola pustulata* (common). **NOCTUIDAE:** *Chrysanympa formosa* (common and super fresh). **GEOMETRIDAE:** *Macaria multilinedata*, *Euchlaena irraria* (super fresh), *Lytrosis permagnaria* (>35 individuals), *Caripeta aretaria*. **THYRIDIDAE:** *Thyris sepulchralis* (rather late and unusual at night). **LIMACODIDAE:** *Tortricidea* undescribed sp.

Gates Chapel Road, 8 mi. WNW of Ellijay, Gilmer Co., ILF:

April 2-4:

EREBIDAE: *Zale lunifera*, *Z. aeruginosa*, *Z. calycanthata*, *Z. minerea*, *Z. bethunei*, *Z. metatoides*. **NOCTUIDAE:** *Feralia jocosa*, *F. major* (late for both *Feralia*). *Lithophane patefacta*, *L. querquera*. **GEOMETRIDAE:** *Selenia kentaria*, *Ceratomyx satanaria*, *Cladara atroliturata*, *C. limitaria*, *C. anguilineata*.

April 16-18:

EREBIDAE: *Zale duplicata*. **NOCTUIDAE:** *Feralia comstocki*. **DREPANIDAE (Thyatirinae):** *Euthyatira pudens* (unusually abundant).

May 8:

EUTELIDAE: *Eutelia pulcherrima* (pair). **NOCTUIDAE:** *Elaphria georgei* (LATE). **GEOMETRIDAE:** *Eufidonia convergaria*.

May 22-24:

EREBIDAE: *Bagirsara rectifascia*. **GEOMETRIDAE:** *Macaria pinistrobata* (unusually common), *Heterophleps triguttaria*.

May 29:

NYMPHALIDAE: *Enodia creola* (1 male, several more sighted). **EREBIDAE:** *Hypena eductalis* (pair). **NOCTUIDAE:** *Chrysanympa formosa*, *Argillophora furcilla*, *Hyppa xylinoides* (COUNTY; first for ILF in GA). **GEOMETRIDAE:** *Euchlaena muzaria* (3 males), *Heterophleps triguttaria* (2 females).

June 12:

GEOMETRIDAE: *Lytrosis sinuosa*, female (female very uncommon).

Salacoa Rd at Salacoa Creek, 5 mi. ESE of Fairmount, NE corner of Bartow Co. (includes cane habitat):

May 9, with Patrick Adams:

HESPERIIDAE: *Poanes zabulon*, *Amblyscirtes aesculapias*. **NYMPHALIDAE:** *Enodia creola*.

May 9-10:

NOCTUIDAE: *Leucania callidior*. **GEOMETRIDAE:** *Heterophleps triguttaria*.

May 22-23:

NOTODONTIDAE: *Hyparpax aurora* (COUNTY). **EREBIDAE:** *Macrochilo absorptalis* (unusually common), *Dasychira atrivenosa*. **NOCTUIDAE:** *Bagirsara rectifascia*, *Leucania callidior*. **GEOMETRIDAE:** *Lytrosis unitaria* (spectacularly common).

June 5-6:

NYMPHALIDAE: *Satyrodes appalachia* (uncommon out of the mountains). **NOTODONTIDAE:** *Peridea ferruginea*. **EREBIDAE:** *Idia majoralis* (3; rarely encountered), *Macrochilo absorptalis* (still common), *Dasychira atrivenosa*, *Catocala umbrosa*, *C. pretiosa*. **NOCTUIDAE:** *Protapamea danieli* (3 individuals). **GEOMETRIDAE:** *Cepphis decoloraria*. **LIMACODIDAE:** *Euclea nanina*.

Oaky Woods WMA, Houston Co., April 1-2:

LACTURIDAE: *Lactura pupula*, (5 specimens; COUNTY). **NOCTUIDAE:** *Acrionicta laetifica*; *Colocasia* sp.

Nongame Office in Forsyth, Georgia, January 22 (sight record):

LYCAENIDAE: *Atlides halesus*; an unusual early emergence, especially considering the cool weather!

Piedmont NWR, Jones County April 23. Ali Iyoob:

LYCAENIDAE: *Fixsenia favonius ontario*.

Pine Log WMA, Bartow County:

LYCAENIDAE: *Fixsenia favonius ontario*, May 9, Luke Theodorou and May 11, Pierre Howard.

Wormsloe State Historic Site, 7601 Skidaway Rd, Isle of Hope, Chatham County, GA, Fitz Clarke:

LYCAENIDAE: *Satyrium kingi*; larvae located on Sweetleaf tree April 14 and 21, adults on May 11, 16 and 22, Fitz *Satyrium calanus* and *S. liparops* also seen May 11.

Auchumpkee Creed Bridge, Upson Co., May 12, Saunders Pinckard:

HESPERIIDAE: *Achalarus lyciades*, *Copaeodes minima*.

Sprewell Bluff State Park, May 12, Saunders Pinckard:

HESPERIIDAE: *Achalarus lyciades*. **PAPILIONIDAE:** *Papilio (Pterourus) palamedes*. **NYMPHALIDAE:** *Enodia portlandia*, *E. creola*.

Fort Pulaski National Monument site, Cockspur Island, Chatham Co., Ga. June 1, Fitz Clarke:

LYCAENIDAE: "Eastern Pygmy Blue" on Glassworts, *Salicornia perennis*, the host-plant. This very small

area of host plant is located at the most northern end of the Nothern Pier/Battery Hambright Trail.

Glynn County off US 17 north, May 31, Mike Chapman:

HESPERIIDAE: *Euphyes dukesi*.

Albany Nursery WMA, Dougherty Co., June 9-11, Roy Brown:

PAPILIONIDAE: *Papilio polyxenes* (mating pair).

Waleska, Reinhardt college campus, Cherokee Co., April 17-18, 2010, with IF:

NOTODONTIDAE: *Clostera inclusa*. **EREBIDAE:** (this family includes some of the former Noctuidae and the former Lymantriidae and Arctiidae): *Hypena manalis*, *H. eductalis*, *Hypsoropha monilis*, *Ptichodis herbarum*, *Zale galbanata*, *Z. helata*, *Z. minerea*, *Z. lunifera*, *Z. calycanthata*. **NOLIDAE:** *Nola triquetrana*, *Baileya dormitans*, *B. ellessyoo*, *B. doubledayi*. **NOCTUIDAE:** *Acronicta laetifica*, *A. noctivaga*, *Agriopodes fallax*, *Alypia octomaculata* (unusual at lights), *Euplexia benesimilis* (unusual out of the mountains), *Chaetagnathia signata* (LATE). **DREPANIDAE:** *Euthyatira pudens*, *Eudeilina herminiata*. **GEOMETRIDAE:** *Orthofidonia flavivenata*, *Euchlaena deductaria*, *Pero ancetaria*, *Selenia kentaria*, *Metarranthis obfirmaria*, *M. homuraria*, *M. hamaria*, *Metarranthis* undescribed species, *Cepphis decoloraria* (fourth location in state), *Probole amicaria*, *Plagodis fervidaria*, *Besma quercivoraria*, *Lambdina pellucidaria*, *Antepione thisoaria*, *Nemoria bistrisaria*, *Anticlea multiferata*, *Xanthorhoe lacustrata*, *Horisme intestinata* (abundant and fresh), *Eupithecia miserulata*, *E. jejuna*. **CRAMBIDAE:** *Scoparia biplagiata*, *Synclita oblitalis*, *Perispasta caeculalis*, *Achyra rantalis*, *Pyrausta acronialis*, *Desmia funeralis*, *Palpita magniferalis*. **TORTRICIDAE:** *Acleris nivisellana*.

Furnace Day Creek use area, north side Etowah River at Allatoona Dam, Bartow Co., with ILF and Matt Chenoweth, March 23, 2010:

NYMPHALIDAE: *Chlosyne gorgone* (several). **LYCAENIDAE:** *incisalia niphon*. **PIERIDAE:** *Pieris virginensis*. **DREPANIDAE:** *Eudeilina herminiata* (several, COUNTY).

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Few moth records were submitted for the late winter and spring period, but two represent major range extensions. Both of these records are based on photographs but have been confirmed by several people who are familiar with the species.

NOCTUIDAE:

Lithophane oriunda, photographed at bait on March 20 by Merrill Lynch at his farm in Watuaga County (STATE). The previous southernmost records appear to be from West Virginia and Pennsylvania. The specimen in the photograph (see Moth Photographers Group website) was confirmed to be *L. oriunda* by Don Lafontaine and also supported by Dale Schweitzer and David Wagner.

Syllectra erycata, photographed by Ali Iyob on April 26 in Johnston County (STATE). Bo Sullivan, who confirmed the photograph (also posted on the Moth Photographers Group website), speculated that it could have been carried up from Florida on a car – it seems way too early for a tropical species to have strayed this far on its own. Ali indeed had found the specimen in a rest stop on I-40, just a few miles from its intersection with I-95.

The following selected butterfly records were submitted by Harry LeGrand. Place names refer to counties unless otherwise stated, and records are not new county reports unless indicated. Records are all from March - May 2010. March was remarkably cool, slowing the flight season, but April and May were quite warm, and by late May the flight season was about a week ahead of schedule. As for seasonal trends, there were remarkably good

numbers of *Polygonia interrogationis* and *P. comma*, as well as *Nymphalis antiopa* and *Vanessa atalanta*. However, *V. virginensis* was quite scarce this spring.

PAPILIONIDAE:

Papilio cresphontes, one was seen at close range by Sparrel Wood in his yard on Butler Mountain in Buncombe (COUNTY) on May 30. As there are very few records for this conspicuous species from the southern mountains, this report likely involves a stray individual.

Papilio palamedes, this species seldom strays far from its normal range in the Coastal Plain, but there were two records for other provinces this season. Rather unexpected was one seen along the Eno River in Durham (COUNTY) on May 16 by Randy Emmitt. However, the first record for the mountains was one photographed at close to 6,000 feet elevation (!) by John Gerwin along the Blue Ridge Parkway in Jackson (COUNTY), on May 23. Could the Persea blight from South Carolina to Florida be causing females to stray long distances to search for live redbay plants for ovipositing?

LYCAENIDAE:

Satyrrium favonius ontario, usually a very difficult find in the Piedmont, there were reports from four locales on six dates: singles in Orange on May 9 (Derb Carter); Durham (COUNTY) on May 15 (Richard Stickney); Mecklenburg (COUNTY) on May 20, 21, and 27 (Taylor Piephoff, Rob Van Epps); and Wake on May 28 (Ali Iyoob).

Erora laeta, this difficult-to-find species was seen three times: singles in Buncombe on April 11 (Gail Lankford) and on April 22 (Janie Owens), and in Haywood on April 14 (M. O'Connor). The last two sightings were along the Blue Ridge Parkway.

Glaucopsyche lygdamus, the first report from Buncombe in several decades was one seen by Doug Johnston on May 4, the only report from the state this season.

NYMPHALIDAE:

Agraulis vanillae, quite early for the mountains was one seen by Doug Johnston in Buncombe at Sandy Mush Game Land on May 20.

HESPERIIDAE:

Urbanus proteus, the earliest ever record for the Piedmont of the state was one photographed at Bethania, in Forsyth, on May 30 by Gene Schepker *et al.* It is seldom seen in the state prior to July.

Erynnis icelus, Harry LeGrand found the species at several spots in Caswell, which lies well into the Piedmont; his peak count was six on April 13, near the Dan River.

Atrytonopsis hianna, rarely found in the mountains, the species was seen by Gail Lankford on May 13 and 20 in Buncombe (COUNTY) at Sandy Mush Game Land. A good count for the Coastal Plain was eight, from Croatan National Forest in Carteret, by Jim Monroe on April 26.

Amblyscirtes vialis, a record state one-day count was the seven tallied by Harry LeGrand and others at Pilot Mountain State Park in Surry on May 1.

Megathymus yuccae, a tent was found in April by David Campbell at a site in Rutherford (COUNTY), only the fourth Piedmont county record in the state.

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Brian sends in this report for Congaree National Park. This report was conducted by Joe Culin, John Snyder and

Brian Scholtens and consists of all the moths collected through April 2010.

Congaree National Park State Record Moths (46 species)

<u>Hodges #</u>	<u>Species</u>	<u>Family</u>	<u>1st Collection Date</u>
00227	<i>Adela caerulea</i>	Incurvariidae	24 Apr. 2010
00275	<i>Nemapogon variatella</i>	Tineidae	17 Apr. 2010
00559	<i>Bucculatrix coronatella</i>	Lyonetiidae	17 Apr. 2010
00627	<i>Caloptilia quercinigrella</i>	Gracillariidae	20 Mar. 2010
00816	<i>Cameraria conglomeratella</i>	Gracillariidae	16 Apr. 2010
01135	<i>Sceptea aequapulvella</i>	Blastobasidae	23 Apr. 2010
01169	<i>Calosima dianella</i>	Blastobasidae	23 Apr. 2010
01365	<i>Coleophora cratipennella</i>	Coleophoridae	16 Apr. 2010
01422	<i>Homaledra sabalella</i>	Coleophoridae	8 Mar. 2010
01524	<i>Triclonella pergandeella</i>	Cosmopterigidae	23 Apr. 2010
01722	<i>Theisoa constrictella</i>	Gelechiidae	23 Apr. 2010
01761	<i>Aristotelia roseosuffusella</i>	Gelechiidae	19 Mar. 2010
02227	<i>Battaristis nigratomella</i>	Gelechiidae	23 Apr. 2010
02287	<i>Dichomeris ventrella</i>	Gelechiidae	20 Mar. 2010
02297	<i>Dichomeris inserrata</i>	Gelechiidae	16 Apr. 2010
02714	<i>Paralobesia sambuci</i>	Yponomeutidae	17 Apr. 2010
02727	<i>Paralobesia cyclopiana</i>	Yponomeutidae	23 Apr. 2010
02822	<i>Olethreutes concinnana</i>	Tortricidae	23 Apr. 2010
02885	<i>Rhyacionia aktita</i>	Tortricidae	19 Feb. 2010
02913	<i>Phaneta umbrastriana</i>	Tortricidae	23 Apr. 2010
03110	<i>Eucosma gomonana</i>	Tortricidae	16 Apr. 2010
03253	<i>Pseudexentera faracana</i>	Tortricidae	8 Mar. 2010
03257	<i>Pseudexentera costomaculana</i>	Tortricidae	24 Apr. 2010
03257.1	<i>Pseudexentera hodsoni</i>	Tortricidae	9 Mar. 2010
03265	<i>Gretchena delicatana</i>	Tortricidae	17 Apr. 2010
03278	<i>Rhopobota finitimana</i>	Tortricidae	23 Apr. 2010
03292.1	<i>Epinotia celtisana</i>	Tortricidae	9 Mar. 2010
03295	<i>Epinotia xandana</i>	Tortricidae	9 Mar. 2010
03372	<i>Ancylis brauni</i>	Tortricidae	23 Apr. 2010
03423	<i>Larisa subsolana</i>	Tortricidae	19 Mar. 2010
03425	<i>Sereda tautana</i>	Tortricidae	19 Mar. 2010
03434	<i>Grapholita fana</i>	Tortricidae	23 Apr. 2010
03469	<i>Cydia candana</i>	Tortricidae	23 Apr. 2010
03498	<i>Ecdytolopha mana</i>	Tortricidae	23 Apr. 2010
03517	<i>Acleris subnivana</i>	Tortricidae	19 Mar. 2010
03539	<i>Acleris chalybeana</i>	Tortricidae	9 Mar. 2010
03597	<i>Argyrotaenia elutinana</i>	Tortricidae	8 Mar. 2010
03685	<i>Clepsis moeschleriana</i>	Tortricidae	20 Mar. 2010
05803	<i>Nephoterix celtidella</i>	Pyalidae	16 Apr. 2010
06662	<i>Paleacrita vernata</i>	Geometridae	22 Jan. 2010
06748	<i>Pero anctaria</i>	Geometridae	17 Apr. 2010
08349	<i>Zanclognatha protumnusalis</i>	Geometridae	27 June 2009
09236	<i>Acrionicta morula</i>	Noctuidae	16 Apr. 2010
09933.1	<i>Eupsilia sidus</i>	Noctuidae	22 Jan. 2010
09934	<i>Eupsilia cirripalea</i>	Noctuidae	20 Feb. 2010
09935	<i>Eupsilia tristigmata</i>	Noctuidae	23 Jan. 2010

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Ed and Charles send in the following report:

The odyssey begins in extreme SETX in Beaumont and Houston and ends there, but we visited and sampled many

counties in the Hill Country and WTX. The time frame is 15-31 May 2010. A county key:

H = Harris
 Je = Jefferson
 J = Jeff Davis
 B = Brewster
 C = Caldwell
 G = Gaudalupe
 U = Uvalde
 M = Medina

V = Val Verde
 P = Pecos
 T = Terrell
 E = Edwards
 R = Real
 K = Kerr
 A = All or most
 * = NCR

All butterflies will be listed, and the more interesting moths:

PSYCHIDAE:

Astala confederata H*
Oiketicus townsendi dendrokomos J

SESIIDAE:

Zenodoxus mexicanus B
Z. palmii U
Melittia grandis E*
M. gloriosa E*
Synanthedon decipiens M*K* COLORADO*
Carmenta arizonae B

COSSIDAE:

Givira arbeloides U
Comadia redtenbacheri B
Prionoxystus robiniae JU

LIMACODIDAE:

Isochaetes beutenmuelleri K*

GELECHIIDAE:

Dichomeris nr. gausapa B*

TORTRICIDAE:

Eucosma giganteana J
Pelochrista scintillana J

HESPERIIDAE:

Epargyreus clarus Je
Thorybes pylades
 a. *pylades* A
 b. *albosuffusa* B
Cogia hippalus B
Staphylus ceos JB
Systasea pulverulenta V
Chiomara georgina V*
Erynnis meridianus UEKR
E. horatius GHJe
E. tristis tatus JRKE*
E. funeralis JE*HJe
Pyrgus communis A
P. albescens PE
P. oileus Je
P. philetas PE
Celotes nesus G
C. limpia J
Pholisora catullus BPREGJ
Lerema accius Je
Copaeodes aurantiaca JREB
Hylephila phyleus UVREHJeG

Euphyes vestris kiowah RE
Atalopedes campestris huron BPERG
Atrytonopsis edwardsi J
Amblyscirtes texanae JB
A. nysa JRBE
Lerodea eufala V
Stallingsia maculosa M

PAPILIONIDAE:

Battus philenor A
B. polydamas H
Papilio polyxenes asterius A
 ("curvifascia" in E)
P. cresphontes UJEJeHKCG
P. multicaudatus VBKRJ
P. glaucus HJe
P. troilus HJe
P. palamedes C*

PIERIDAE:

Pontia protodice A
Pieris rapae B
Colias eurytheme A
Zerene cesonia A
Phoebis sennae A
P. agarithe U
Kricogonia lyside A but HJe
Pyrisitia lisa A
Abaeis nicippe A
Eurema mexicana JB
Nathalis iole A

LYCAENIDAE:

Phaeostrymon alcestis U
Satyrium favonius autolytus UR
Callophrys gryneus castalis U
Strymon melinus
 a. *melinus* A
 b. *franki* UJ
Brephidium exile PBE*R*
Leptotes marina JBR
Hemiargus ceraunus
 a. *astenidas* U
 b. *gyas* PJB
Echinargus isola A
Zizula cyna J

RIODINIDAE:

Calephelis nemesis B
Apodemia palmerii B

LIBYTHEIDAE:

- Libytheana carinenta*
 a. *bachmanii* JeHC
 b. *larvata* JBTRMEUK

NYMPHALIDAE:

- Agraulis vanillae incarnata* A
Euides isabella eva T*
Danaus plexippus A
D. gilippus thersippus A except HJe
Polygonia interrogationis UHJe
Nymphalis antiopa B
Vanessa cardui UERKJB
V. virginiensis most A
V. atalanta rubria A
Junonia coenia HE
Euptoieta claudia A
Anthanassa texana JEKRHB
Phyciodes phaon KJe
P. tharos HJeU
P. graphic vesta UJBPEG
Chlosyne lacinia adjutrix K
C. theona
 a. *bollii* V
 b. *theckla* P
Texola elada M
T. perse B
Limenitis archippus H
L. arthemis
 a. *astyanax* JE
 b. *arizonensis* JB
Adelpha eulalia C*JBKR
Anaea andria GE
Asterocampa celtis
 a. *celtis* HJe
 b. *antonia* K
A. clyton
 a. *clyton* Je
 b. *texana* HUVTJ
A. leilia B
Megisto rubricata
 a. *rubricata* RK
 b. *smithorum* B

CRAMBIDAE:

- Eudonia* sp. B*
Pyrausta retidiscalis B

PYRALIDAE:

- Triozosneura dorsonata* B
Philocrotona kendalli B
Meroptera anaimella J
Dioryctria caessirufella U
Vitula pinei B*

GEOMETRIDAE:

- Speranza saphenata* B
Digrammia muscariata respersata B
Stenoporpia blanchardi B
Ixala sp. nr. or = *desperaria* B*
Phaeoura perfidaria B
Sicyopsis blanchardata B
Acanthotoca graefi V
Coryphista meadii K*

- Euphyia swetti* B

EPIPLEMIDAE:

- Antiplecta triangularis* J*

SATURNIIDAE:

- Sphingicampa heiligbrodti* UV
Antheraea oculatea B

SPHINGIDAE:

- Manduca sexta* UJB
M. quinquemaculata UTJ
Ceratomia amyntor J (*1st record of adult in Trans-Pecos TX)
Sphinx istar U
S. chersis B
Amorpha juglandis UJT
Pachysphinx occidentalis J
Eumorpha fasciata Je
Darapsa myron JB
Xylophanes falco J
Hyles lineata UTB

NOTODONTIDAE:

- Furcula nivea meridionalis* J
Hippia packardi U
Heterocampa belfragei B

ARCTIIDAE:

- Lycomorpha splendens* B
L. pholus KR
Utethesia ornatrix UT*
Holomelina costata UTJ
Grammia incorrupta J
G. f-pallida J
Lophocampa caryae B
Euchaetes polingi J
Pygarctia flavidorsalis UT
Bertholdia trigona

NOCTUIDAE:

- Reabotis immaculalis* J
Hemeroplanis trilineosa UV
Anomis edatrix B*
Obrima rinconada B
Drasteria inepta B
D. fumosa BV
D. pallescens JU
Catocala texanae B
C. ultronia H
C. desdemona U
C. verrilliana K
C. ilia H
C. micronympha UK
Diastema clossa T*
Acontia chea T
Bagisara praexcelsa UTB
Charadra moneta B
Dypterigia dolens U
Cirrhophanus pretiosa U
Sympistis cottami B
S. griseicollis B
Schinia gaurae J
S. bina T

S. olivacea T

There are 3 likely State Record moths that may be reported later.

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The Southern Lepidopterists' News is published four times annually. Membership dues are \$20.00 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; E-Mail: jsloten@bellsouth.net.

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