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

J. BARRY LOMBARDINI: EDITOR

MESKEA DYSPTERARIA GROTE IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

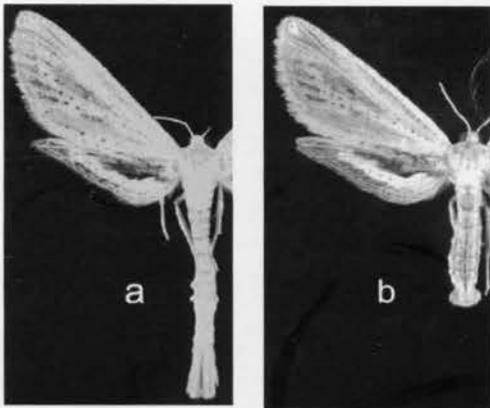


Fig. 1. *Meskea dyspteraria*: a. male, b. female.

The uncommon moth *Meskea dyspteraria* Grote (Fig. 1) is a member of the family *Thyrididae*. Heppner (2003) lists *dyspteraria* to occur March-May & December in the southeast United States, specifically Florida and Texas. It appears *dyspteraria* has a single annual brood in Louisiana (Fig. 2) and is known only from the Abita Springs study site (Fig. 3).

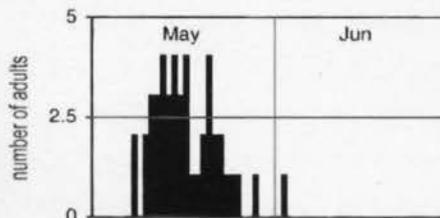


Fig. 2. *Meskea dyspteraria* captured at sec.24T6SR12E, 4.2 mi. NE Abita Springs, Louisiana. n = 45.



Fig. 3. Parish records.

Literature Cited

Heppner, J.B. 2003. *Arthropods of Florida and neighboring land areas*, vol. 17: Lepidoptera of Florida, Div. Plant Industry, Fla. Dept. Agr. and Consum. Serv., Gainesville. x + 670pp., 55 plates.

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FSCA LEPIDOPTERA MOVE

As of April 25, 2005, the Division of Plant Industry, of the Florida Dept. of Agriculture & Consumer Services, and the McGuire Center for Lepidoptera and Biodiversity, of the Florida Museum of Natural History, University of Florida, both in Gainesville, Florida, formally signed the agreement to house the department's Lepidoptera from the Florida State Collection of Arthropods (FSCA) within the new McGuire Center. This more than doubles the Lepidoptera specimens now housed at McGuire Center, with the addition of the nearly 2 million adult and larval Lepidoptera of the FSCA. The agreement is similar to what the FSCA has had already for many years with Florida A & M University, where some of the aquatic insect groups (Trichoptera, Plecoptera, Ephemeroptera) have been housed on their campus in Tallahassee, Florida (Odonata remain at DPI in Gainesville). The FSCA is the official name of the State of Florida insect collections, in total with about 8.8 million processed and curated specimens of insects from all regions of the world.

The move of FSCA Lepidoptera to McGuire Center is an exciting opportunity to better curate these specimens, to have more space, and to have more staff curators for the vast numbers of Lepidoptera being brought together. Moving the FSCA Lepidoptera will also vacate space at DPI and provide much-needed expansion room (including about 7000 insect drawers) for the other insect groups (beetles, bugs, flies, bees, and wasps, etc.). The DPI/FSCA Lepidoptera curator, Dr. John B. Heppner, will be moving his office over to McGuire Center as well, joining new McGuire Center staff already there with expertise in various groups, including Drs. Thomas Emmel (McGuire Center director), Keith Willmott, Andrei Sourakov, Jackie Miller, and Lee Miller, on butterflies, and Paul Goldstein on Noctuidae and DNA analyses, plus Charles Covell (formerly professor at the University of Kentucky, Louisville) on Geometridae, Dale Habeck (formerly professor at UF) on larvae, and Jim Nation (formerly professor at UF) on lepidopteran basic biology. Many Lepidoptera students, post-docs and visiting researchers are also present at McGuire Center, quickly filling available offices.

While the public exhibits at McGuire Center are complete and extensive, including a large butterfly house, and staff are in their offices, the actual process of organizing all the incoming Lepidoptera collections will be a huge task that will take many months yet. Many new donations and other collections are coming in as well, so by the end of 2005 McGuire Center will be housing about 6 million Lepidoptera specimens, the largest such accumulation in the entire New World, and worldwide second only to the Lepidoptera collections at the museums in Munich, Germany (ca. 7.5 million Lepidoptera), and London, England (ca. 9 million Lepidoptera). Ultimate McGuire Center specimen capacity is estimated at about 23 million pinned specimens in the 3 floors of museum space. The collections at the former Allyn Museum of Entomology, in Sarasota, Florida, were already moved to McGuire Center last year. FSCA Lepidoptera specimens are now just starting the short 175 foot move from the back door of the DPI building over to the back door of the new McGuire Center. While the distance is short the actual transfers are expected to take about 8 weeks, until the end of June.

Due to these moving activities and the general upheaval, FSCA Lepidoptera loans will not be possible for the next 6-12 months, as the collections are moved and reorganized in the new collection rooms at McGuire Center. Any emergency requests may be sent in for special consideration, but generally it will not be possible to honor loan or information requests for Lepidoptera until the collections are reorganized at McGuire Center. Further donations of specimens, however, will continue to be accepted and processed for the FSCA by the Entomology Section at DPI, as has been usual in past years.

J. B. Heppner,
Lepidoptera Curator, FSCA

LAWN FURNITURE: A SLS member (and a good friend for many years) remarked to me that I must be getting desperate if I have to print photographs of my Lubbock backyard lawn furniture [VOL. 27 NO.1 (2005) PLATE 1]. May be true, but this situation could be corrected if members would send me articles and photographs of lepidoptera. Always glad to hear from the membership [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	\$15.00
Student	\$12.00
Sustaining	\$25.00
Contributor	\$50.00

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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COLOR PLATE 1: Accompanies the article by J. Barry Lombardini on the Swallowtails of Lubbock County, Texas (covering 32 years of collecting in the West Texas area).

COLOR PLATE 2: Accompanies the comments by a SLS member and a former TTUHSC colleague submitted to the Editor, and the article by Sharon Stello, Davis Enterprise staff writer (Davis, California), on the

Painted Lady (*Vanessa cardui* [Linnaeus]) Migration in California this Spring. The photographs of the life cycle of the Painted Lady were kindly provided by Peter Bryant, University of California, Irvine.

**CATOCALA LINCOLNANA BROWER AND
CATOCALA TEXARKANA BROWER IN LOUISIANA**

BY
VERNON ANTOINE BROU JR.

The rarely encountered noctuid moth *Catocala lincolnana* Brower (Fig. 1a) has been captured in two Louisiana parishes (Fig. 2). The little known species *Catocala texarkana* Brower (Fig. 1b) is recorded for Louisiana by a series of several dozen specimens taken at ultraviolet light in northwest Louisiana (Fig. 2) taken over two nights in late May. More

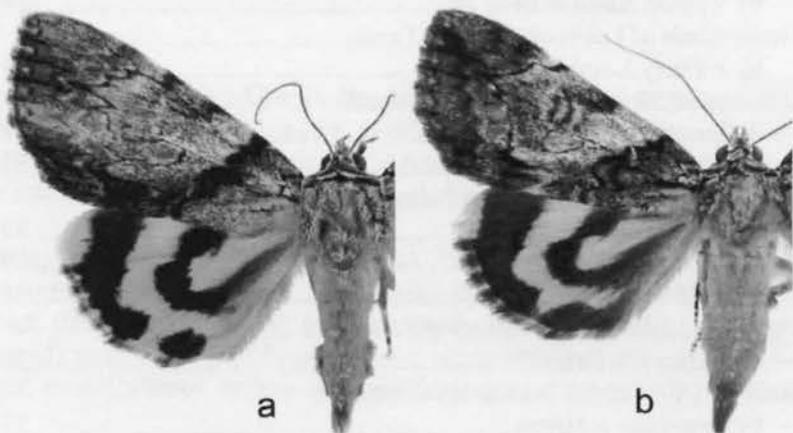


Fig. 1. a. *Catocala lincolnana* male, b. *Catocala texarkana* female.



Fig. 2. Parish localities by this author
lincolnana ●, *texarkana* ★

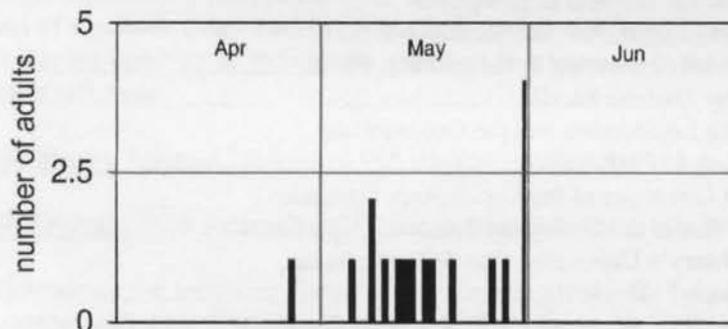


Fig. 3. *Catocala lincolnana* captured at sec.24T6SR12E, 4.2 mi. NE Abita Springs, Louisiana. n = 17.

specimens of *lincolnana* were captured at fermenting fruit bait (apples, granulated sugar and beer) than at ultraviolet light. The dates of capture for *lincolnana* are shown in Fig. 3. Neither *lincolnana* nor *texarkana* are illustrated by Covell (1984), though both are listed under similar species to *Catocala crataegi* Saunders. Both *lincolnana* and *texarkana* are listed to occur from Arkansas/Texas to Georgia/Florida by Heppner (2003).

Literature Cited

Covell, Jr., C.V. 1984. *A Field Guide to the Moths of Eastern North America*. The Peterson Field Guide Series No. 30. Houghton Mifflin Co., Boston. xv + 469pp., 64 plates.
Heppner, J.B. 2003. *Arthropods of Florida and neighboring land areas*, vol. 17: Lepidoptera of Florida, Div. Plant Industry, Fla. Dept. Agr. and Consum. Serv., Gainesville. x + 670pp., 55 plates.

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DEFINITION: *Melanic* – dark or blackish resulting from a high degree of pigmentation.

Montane – pertaining to mountainous regions between foothills and timberline.

CERATONYX SATANARIA GUENEE IN LOUISIANA
 BY
VERNON ANTOINE BROU JR.

The uncommon geometrid moth *Ceratomyx satanaria* Guenee (Fig. 1) was reviewed by Rindge (1975) in a revision of the genus. Rindge's 12 species investigation covered three species in the United States, two southwest species and *satanaria* occurring from South Carolina to Georgia and Northern Florida, Mississippi and Texas. Rindge's limited study series of 29 specimens indicated a single brood flight period February-March. Rindge stated: "This is one of the rarer species of moths found in our southeastern states".

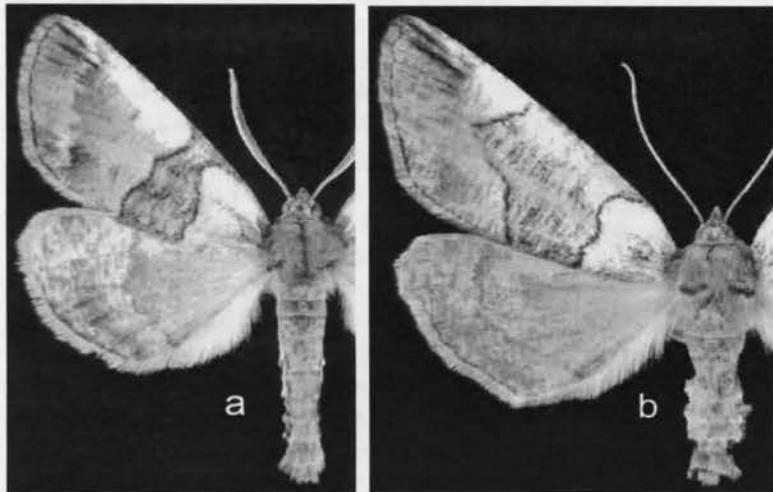


Fig. 1. *Ceratomyx satanaria*: a. male, b. female.

In Louisiana, *satanaria* has a single late winter brood flight peaking late February (Fig. 2).

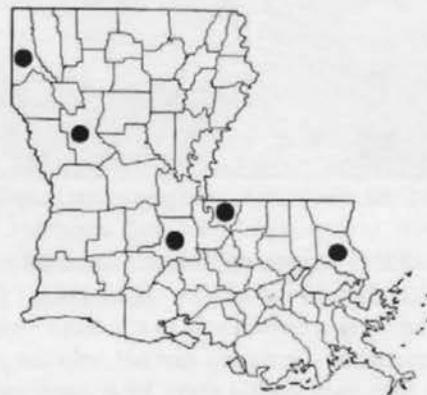


Fig. 3. Parish records by this author.

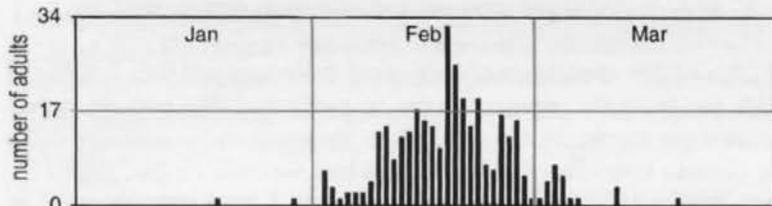


Fig. 2. *Ceratomyx satanaria* captured at sec.24T6SR12E, 4.2 mi. NE Abita Springs, Louisiana. n = 332.

I have captured *satanaria* in five parishes across the state (Fig. 3). Interestingly, of more than 400 Louisiana specimens captured using ultraviolet light, only two are females. Female *satanaria* have forewings and hindwings more elongated than in males and the median line of the female forewing differs significantly from the male's in arising from the inner margin, distally approaching the apex to a distance about two-thirds the distance between inner margin to costal margin, then acutely changing direction basally as it approaches the costal margin.

Literature Cited

Rindge, Frederick H. 1975. *A Revision of the Moth Genus Ceratomyx (Lepidoptera, Geometridae)*, American Museum Novitates, Am. Mus. Nat. Hist. No. 2564, 30 pp.

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DEFINITIONS: Dimorphism - the occurrence of two types of individuals in the same species, distinct in coloring, size, etc. (Adjectives: **dimorphic, dimorphous**).

Muskeg - bog or marsh containing thick layers of decaying vegetable matter, mosses, etc.

SWALLOWTAILS OF LUBBOCK COUNTY, TEXAS

BY

J. BARRY LOMBARDINI

In the first 10-15 years of collecting butterflies in West Texas I routinely encountered 2 swallowtails, the Two-tailed Swallowtail (*Papilio multicaudata* Kirby) and the Black Swallowtail (*Papilio polyxenes* Fabricius) (Please see Color Plate 1). Both of these butterflies were fairly common in the backyards and alleys within the City of Lubbock. Unfortunately,



Black Swallowtail (*Papilio polyxenes* Fabricius)

in the last 15 years or so the Two-tailed Swallowtail has almost disappeared from the City while the numbers of the Black Swallowtail appear to have been dramatically reduced. However, if one grows dill in their backyard there is still the chance that a female Black Swallowtail may appear to deposit her eggs.

Two other swallowtails, the Giant Swallowtail (*Papilio cresphontes* Cramer) and the Pipevine Swallowtail (*Battus philenor* [Linnaeus]) have never been very common and also have gone the way of the previous two in that they are now rarely (never) seen. The Giant Swallowtail and the Pipevine Swallowtail butterflies were seldom observed in the City, but in those very early years of my residence in this area they could be found in the canyons and lake areas outside the City.

So what is happening? Have I lost interest because I have a few specimens of each in my collection and thus just do not notice them in the City or countryside. I well realize that butterfly populations can be cyclic and thus perhaps we are presently in a down cycle. Or is there really a demise of these species in this area? The City sprays for mosquitoes in the summertime - certainly can not help the populations of these butterflies (See comments by Lawrence Hribar, page 37). But then this Spring there have been more Cabbage Whites (*Pieris rapae* [Linnaeus]) than I have ever observed in Lubbock.

Finally, there is the Ruby-spotted Swallowtail (*Papilio anchisiades* Esper). I have only one specimen of this species and it was caught by my daughter in our backyard when she was 13 years old, some 22 years ago. Never have seen another in all my years here. The food plant for this butterfly is citrus which is not found in our area as the winters are too severe for its survival.

BUTTERFLY QUOTATIONS

Love is like a butterfly, hold it too tight, it'll crush, hold it too loose, it'll fly.

(Unknown author)

If nothing ever changed, there'd be no butterflies.

(Unknown author)

What the caterpillar calls the end of the world, the master calls a butterfly.

(Richard Bach – an American writer and a distant descendant of the composer Johann Sebastian Bach. Mr. Bach is the author of *Jonathan Livingston Seagull* [1970] and many other works of fiction and nonfiction [born 1936]).

LATE APPEARANCES OF THE EARLY HAIRSTREAK:
ERORA LAETA IN TENNESSEE, 1977 - 2004

BY
JOHN A. HYATT

Erora laeta has always been a special insect for lepidopterists with an interest in Lycaenids. I suppose that every one who has ever seen or captured specimens of the Early Hairstreak can remember the finest details of each encounter. The species has always been a rarity which, as Klots said in his classic Field Guide to the Butterflies, should be "sought but not expected".

My first encounter with *laeta* was certainly unexpected. A morning walk along a dirt road near where Laurel Run Creek joins the Holston River in Hawkins Co., TN, on April 31, 1977, led through a wet patch of road that was covered with butterflies – *Pieris virginiensis*, *Feniseca tarquinius*, *Battus philenor*, *P. glaucus* and *troilus*, and *Celastrina ladon* formed groups of various sizes and composition all along the road. But off to itself was a single little Lycaenid that looked different even from yards away. I put a net over the bug and it didn't move. I actually captured it with forceps as it sat on the wet dirt road – my first *Erora laeta*. At the time, I wasn't even sure what it was – *laeta* was one of those species I had seen in the books, but discounted the possibility of ever finding anything that rare myself. One week after capturing that first female, I returned to the spot and found a worn male, still struggling feebly in the roadside spider web that had snared it. No more were seen in 1977 despite several searches of the area in both spring and summer.

In 1978 at the same Hawkins Co., TN, site, *laeta* was back again in the spring. I have females in my collection from 15 April and 18 April. Both were taken like the first one – sitting on the wet dirt road.

Although I no longer have the specimens, my records show that I took *laeta* again at Laurel Run in the spring of 1979 and 1980 (one male each year). After 1980, however, the sightings ended. I returned to the site each and every spring, but never found the Early Hairstreak again. Sadly, in 1984 the site was severely disturbed: The dirt road and surrounding old fields were used as the location for filming a movie ("The River", Universal Studios, Mel Gibson and Sissy Spacek). After the movie-making was done, the dirt road was paved and the area turned into a public park. The originally dense butterfly populations seem to have waned considerably and I seldom go back to Laurel Run nowadays. Interestingly, the late 1970's and early 1980's was a time of peak *Erora laeta* abundance at the well-known Big Black Mountain (Harlan Co., KY) site as well, and after the early '80's the insect has seldom been seen there either.

Paul Opler's 1996 County Atlas of Eastern North American Butterflies shows four dots in Tennessee on the *Erora laeta* page. One is in Hawkins Co. and represents the encounters described above, and there is one each in Sevier and Blount counties. These latter two counties include much of the TN part of the Great Smoky Mountains National Park, and I daresay that Opler's dots refer to old records from the Park. The fourth TN dot is in Sullivan Co., where I reside. This one is a puzzle – I know of no Sullivan Co. records of *laeta*, and I wonder if this dot was placed in the atlas through error.

There the matter rested until the recent past, when the Early Hairstreak reappeared in Tennessee after many years without sightings. Allan Trently made the first sighting at the Grassy Ridge area of Roan Mountain in Carter Co., TN, in late June, 2001; the butterfly was again seen there during a 4th of July butterfly count that took place on 7 July 2001. Then last year, two sightings were made of the spring brood. Allan Trently writes:

"On April 16, 2004, biologist Jenny Fiedler and I were working on Braden Mountain, Campbell Co., TN. Above us in the trees was a Cerulean Warbler singing. I spotted a small butterfly on the ground. Upon looking at it, I realized that it was an Early Hairstreak. The tiny butterfly was a brilliant minty green with reddish-orange bands below and a metallic blue above. Photographs, both digital and 35mm, were taken. I did not expect the butterfly to be present here, since it is a denizen of American beech forests such as the beech gaps on Roan Mountain. Beech does not occur on Braden Mountain."

The most recent sighting was related to me by Don Holt of Johnson City, TN:

"On Monday, April 19, 2004, at Austin Springs, Washington Co., TN, where the Watauga river enters Boone Lake, I saw one Early Hairstreak at the edge of a dirt road adjacent to the river. It was on the ground, allowing a clear view from three feet away through my 8X binoculars. It had a notch out of a hindwing, showing the opposite dorsal's iridescent blue. The river had a narrow wooded zone, mostly sycamores. The nearest sizable forest was at least a quarter mile away, and probably contained some of the typical local beech/oak. The elevation there is around 1500-1600 feet; the weather was mostly clear, breezy, and temperatures were in the 70's."

The Trently sighting in Carter Co. and the Holt sighting in Washington Co. were both only a couple of counties removed from my original Hawkins Co. locale. The Washington Co. site sounds very much like my Laurel Run locality – butterfly sitting on a dirt road, nearby river, elevation somewhat above 1300 feet. But Trently's photographed encounter in Cambell Co. seems odd – that location is significantly west of the Ridge and Valley province that encompasses the other sites, and is in fact on the Cumberland Plateau, a quite different sort of habitat, as Trently pointed out.

So, after nearly 20 years' absence from the scene in Tennessee, *Erora laeta* is being seen again in the new century. Butterfly populations wax and wane, observers and collectors come and go, and occasionally things come together to produce banner years for usually rare species. I haven't personally found *laeta* again in Tennessee, but I'm sure "seeking but never expecting" as Klots recommended!

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PAINTED LADY MIGRATION IN CALIFORNIA

The following are some comments that were sent to the Editor concerning the large numbers of Painted Ladies that were observed in California this Spring (This is a common phenomenon that occurs every few years depending upon the weather conditions.) (Please see Color Plate 2):

April 1, 2005:

Former Colleague of mine at Texas Tech University Health Sciences Center who retired in San Diego: "Dear Barry, The painted ladies are definitely back in the San Diego area. I have never seen anything like this before. There are so many flying by the yard in front of our house it is just unbelievable. Yesterday we were joined by some tennis playing friends for happy hour at a Del mar restaurant. The wife had been playing tennis at Rancho Valencia and said that there were so many painted ladies flying over the courts that they could barely play tennis. Carolyn will be up there playing this morning and I will be playing tomorrow. But if there are anywhere near as many flying there as here, they will definitely be a distraction. According to our paper this morning, there are millions here right now. Apparently the wet conditions in the California deserts are responsible for the tremendous numbers. I would think the big Bend area in Texas might also be a good breeding ground for the painted ladies. Is it?"

April 1, 2005:

Hank Leabee (SLS member): "There is an interesting phenomenon going on here. It appears there is a swarm of painted ladies in the Bay Area. I was in the San Francisco sunset district yesterday and counted 70 individuals in 10 minutes in front yard flying north. They were all headed in same direction.

I also noticed this in other parts of the city. I also noticed some painted ladies in my backyard (San Leandro, CA) - more than usual. Is that a common occurrence?"

April 4, 2005:

Former Colleague of mine at Texas Tech University Health Sciences Center who retired in San Diego: "Dear Barry, Friday was something else. About 80 degrees, sunny, low humidity, and painted ladies galore. They were so thick in the La Jolla area they stopped traffic. On late Friday afternoon we were sitting on our porch after returning from the beach. There were butterflies all over, classic restored cars coming out of the Del Mar fairgrounds - Model T's, Edsels, etc., hot air balloons behind us, and a beautiful blue ocean in front of us. What a show. The painted ladies were still around on Saturday but were not nearly as plentiful. The question is how do they make it back to the desert after they have traveled up north. Apparently they die along the way but reproduce and the new ones make it to Oregon and Washington. But how do they return?"

June 24, 2005:

Hank Leibee (SLS member): "Last week, June 14 and 15, we had another influx of painted ladies. This time headed southwest which is the reverse direction of the earlier swarm. It lasted just two days then no others. They appeared freshly hatched, all in good shape, nice size.

I have a small Jupiter's Beard plant that was loaded with them all day long. I would say the flight density was about one every ten seconds.

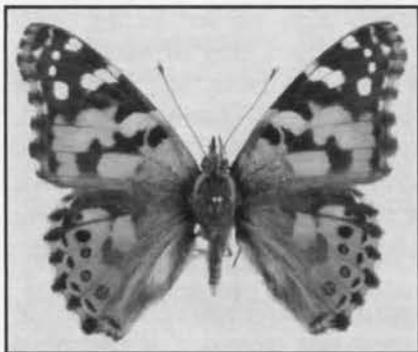
You can quote me on this. And it was not the same one flying in circles."

SWARMS OF BUTTERFLIES MIGRATE FROM DESERT

BY

SHARON STELLO / DAVIS ENTERPRISE STAFF WRITER (March 29, 2005)

Millions of painted lady butterflies were flitting and fluttering through Davis and the rest of the Central Valley on Monday in a massive annual migration from California's southern deserts.



Painted Lady (*Vanessa cardui* [Linnaeus]), dorsal (Photograph by J. B. Lombardini)

What some described as clouds of these orange - to - rosy - pink butterflies with black, brown and white spots filled downtown and much of the city. At first glance,

they looked like leaves swirling in the wind - mistaken by some as monarchs. Waves of them started appearing in the morning and continued through the afternoon, peaking around lunchtime.

They could be seen flying from the southeast to the northwest, about 6 to 12 feet above the ground, darting across roads and rising over obstacles like buildings rather than going around them.

Debbie Johansson and her daughter were captivated by the butterflies flying past their home on West Eighth Street. She was delighted that the butterflies came through town during spring break, so the children could see them.

"They're just amazing. It's so fascinating," Johansson said of the migration.

Her daughter, 7-year-old Katurah,

netted one of these winged wonders and spent some time studying the insect before releasing it to continue on its way.

"I think they're pretty," Katurah said. "They're all over the place and I could have probably even caught one in my hand."

Ellen Moriarty was riding her bicycle on G Street when she encountered the butterflies.

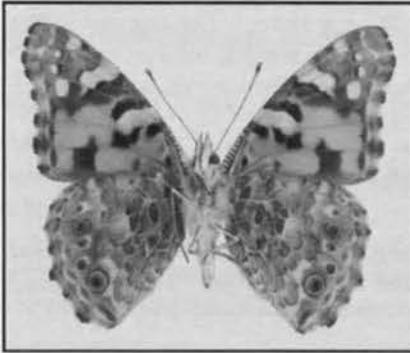
"They were just pouring in ... in pulses of like 40 butterflies coming over the roof. Not one would veer from the course and none of them landed at all," Moriarty said. "It was a little bit surreal."

Moriarty said witnessing this migration was a reminder of nature's presence.

"There are traffic patterns other than on the freeway and it's rush hour

right now," Moriarty said.

Her daughter, 6-year-old Vivi Kirsch, was mesmerized by the sheer numbers.



Painted Lady (*Vanessa cardui* [Linnaeus]), ventral (Photograph by J. B. Lombardini)

"It's neat and it's cool," Vivi said. "It's just that there's so many of them."

Indeed. While a few butterflies can be spotted on most spring days, this experience was definitely out of the ordinary.

Butterfly expert Arthur Shapiro, professor of evolution and ecology at UC Davis, explained that the annual migration can occur as early as late January and as late as mid-April. What makes this year special is the remarkable number.

"The migration occurs every year, but usually the numbers are lower, so people don't notice it," Shapiro said. He recalls four or five of these large migrations in the past 34 years.

This year, the butterflies started arriving March 11 and the numbers began building Friday. While observing the migration in Suisun City on Monday, Shapiro counted 34 in the first hour and then tallied 324 in the following 1 1/2 hours. In Davis, he said the butterflies were passing by at a rate of one per second at one point.

For anyone who missed the

spectacle, Shapiro said the migration is not over.

"I think we're going to see waves of them coming for the next couple weeks," Shapiro said.

He estimates millions of the butterflies will fly through Yolo County and hundreds of millions or perhaps billions will visit the greater region.

"We're talking really huge numbers," Shapiro said.

This population explosion only occurs in years when ample winter rains produce a bumper crop of desert annual plants on which the species feeds. Record rains in Death Valley and the Mojave desert created the right conditions this year.

Painted lady butterflies spend winter in deserts along the U.S.-Mexico border every year. In late winter, these butterflies breed on desert annual plants. New butterflies emerge from their pupas in February or March and immediately take off to the northwest, migrating through the Inyo-Kern area into the Central Valley and foothills to breed.

The trip takes only a few days - roughly three days from Bishop to Sacramento in good weather - because the butterflies don't have to stop to feed.

"They can fly continuously from sunrise to sunset," Shapiro said.

The butterflies can travel nonstop because they emerge from the pupa with a large supply of yellow fat, which is used as fuel for the migration. This substance is what makes the yellow splotch on windshields when a butterfly hits the glass. When their fat supply is depleted, generally after reaching the Central Valley, they begin feeding on flower nectar and lay eggs.

Shapiro said the emerging caterpillars feed on weeds such as thistles, mallows and fiddleneck, which are normally not of economic importance. However, he said, there are some records of them wiping out crops of borage and comfrey - plants in the same family as fiddleneck - at herb farms.

Butterflies resulting from breeding in the Davis and Sacramento area will emerge in May and emigrate immediately, flying north to breed in the Pacific Northwest.

"When the adults hatch in May, they pack up and leave for Oregon, Washington and even British Columbia to look for greener pastures," Shapiro said.

The return migration southward begins in August and continues into November. It's usually inconspicuous in the Central Valley, but is more noticeable on the east side of the Cascade and Sierra Nevada mountains, "where the butterflies visit flowers of rabbitbrush, a shrub that blooms in autumn, to tank up on nutrients from nectar." Only the early spring migration is fueled by fat. Feeding en route makes the fall migration a slower journey.

Shapiro explained that the migration is apparently a way of tracking the seasonal progress of host-plant availability. Elsewhere in the world, painted lady butterflies winter in North Africa and migrate to Europe for the summer, sometimes reaching as far north as Scandinavia.

Shapiro said "there is reason to suspect that migration is controlled hormonally by day length." Bird migration is believed to be controlled the same way.

For more information about the painted lady butterfly migration, you may contact Dr. Arthur Shapiro at amshapiro@ucdavis.edu.

You may contact Sharon Stello at sstello@davisenterprise.net or (530) 747-8043.

[The membership of the Southern Lepidopterists' Society and the Editor of the Southern Lepidopterists' News thank Sharon Stello and The Davis Enterprise (315 G Street, Davis, CA 95616) for allowing us to reprint the above article.]

WELCOME TO OUR NEW MEMBERS

Joshua Ellis Aries
4737 Deer Road
Orlando, FL 32812

Don Lafontaine
Biodiversity Program, ECORC
Research Branch
Agriculture and Agri-Food Canada
K.W. Neatby Bldg.
Central Experimental Farm
Ottawa, Ontario, Canada K1A 0C6

Laura Hartner
6003 Oakmont Avenue
Ocala, FL 34472

MEMBER'S NOTICES

LIGHT TRAP ADVERTISEMENT

FOR SALE: *Light Traps*, 12 volt DC or 110 volt AC with 18 inch length - 15 & 25 Watts and 24 inch length - 20 & 40 Watt in both 12 Volt DC and 110 Volt AC all with 365 Quantum black light bulbs. Rigid vane assembly of stainless steel, aluminum or plexiglass. The traps are portable and easy to use. Rain drains and beetle screens protect specimens from damage.

BAIT TRAP ADVERTISEMENT

FOR SALE: *Bait Traps*, 15" Diameter, 36" tall collapsible traps with cloth top and plastic coated nylon screen and supported with 3/16 steel rings. A plywood platform is suspended with "Eye" bolts and "S" hooks. The bait container is held in place by a retainer. Three types are available: Flat Bottom, Invert Funnel and Tropical.

NIGHT COLLECTING LIGHT ADVERTISEMENT

FOR SALE: *UV Night Collecting Light*. Units are designed with the ballast enclosed in a weather tight cast aluminum enclosure and the fluorescent bulbs in a clear shatter proof tube in 18 inch length - 15 & 25 Watts and 24 inch length - 20 & 40 Watt in both 12 Volt DC and 110 Volt AC all with 365 Quantum black light bulbs.

A 110 Volt AC - 24 inch 40 Watt Quantum Black Light unit with a preheat rapid start ballast for use in the tropics is also available.

Visit our Web Site at: www.leptraps.com. Or for a free brochure and price list contact: Leroy C. Koehn, 202 Redding Road, Georgetown, KY 40324-2622; Tel: 502-570-9123; E-mail: lightrap@leptraps.com

INTERESTING FACT ABOUT TEXAS: There are more bird species in Brazoria County than in any other location in North America.

HYPOCALA ANDREMONA (CRAMER) IN LOUISIANA

BY

VERNON ANTOINE BROU JR.

In North America, the tropical noctuid moth *Hypocala andremona* (Cramer) (Fig. 1) can be occasionally captured in far ranging northern locations as Ontario (Handfield,1999) to Nova Scotia (Neil, 1979) and Maine, south to Florida and west to Arizona, though most states in this wide expanse have no published records of it. Rings *et al.* (1992) reported *andremona* from Ohio with five county records during August, September and October. Heppner (2003) lists the range of *andremona* to include the West Indies and Mexico, south to Brazil.

There is some controversy as to whether the author reference should be Stoll or Cramer. The blackish reniform spot of the forewing can be large as shown in Fig. 1, or small to nonexistent. Knudson & Bordelon (2004) state *andremona* can be common in the Lower Rio Grande Valley of Texas and occurs throughout much of Texas.

In Louisiana, *andremona* is always encountered as singletons at ultraviolet light. Fig. 2 illustrates the locality records by this author. Most all of the Louisiana records are from the late summer and fall months (Fig. 3). Larva feed on persimmon *Diospyros sp.* (Ebenaceae). In Louisiana, the common persimmon *Diospyros virginiana* L. is widely distributed throughout the state (Brown, 1945).

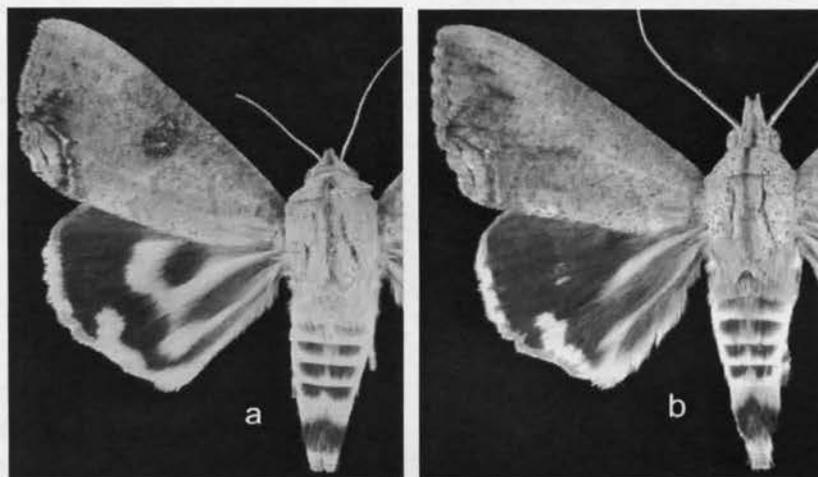


Fig. 1. *H. andremona* adults: a. male, b. male aberrant.

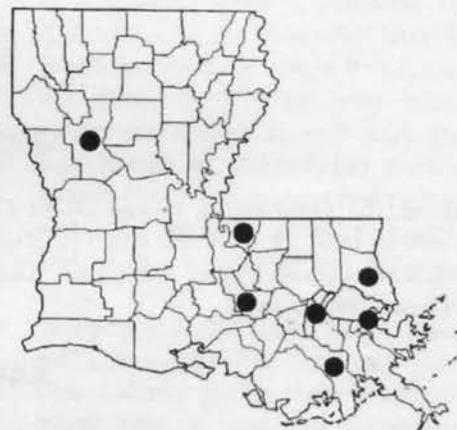


Fig. 2. Parish records by this author.

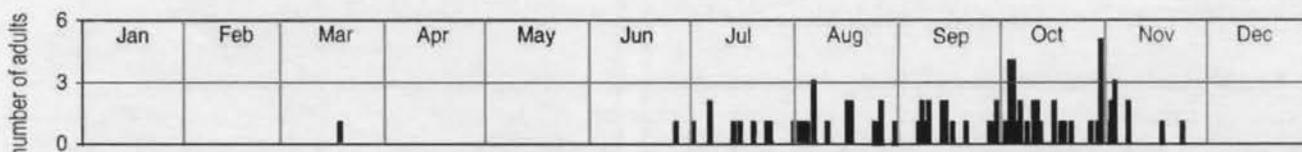


Fig. 3. *H. andremona* captured at sec.24T6SR12E, 4.2 mi. NE Abita Springs, Louisiana. n = 87.

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- Neil, K. 1979. Additions to the Macrolepidoptera of Nova Scotia. *Proceedings of the Nova Scotia Institute of Science*, 29: 197-200.
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MEMBER'S COMMENTS

Dear Editor:

It is my usual practice, when embarking upon a new endeavor, or joining a new group, to keep my mouth shut and my eyes and ears open in order that I may learn from persons more experienced than I. However, I find I must take issue with the column, "Wing Flaps" in the December 2004 issue of SLN. (Not only am I a new member of the SLS, I am employed by a mosquito control agency.)

In the fourth paragraph, the author correctly states that mosquito control is best conducted against larvae. (To be completely accurate, source reduction is the best method, but that is increasingly difficult due to permitting and public opinion issues.) Then the author takes issue with local authority's response to equine and avian mortality due to West Nile virus, comparing the use of mosquito adulticide to the use of a shotgun to kill a mouse. Although it may seem to some an arbitrary use of adulticide, since no human deaths were reported, please note that dead birds and a dead horse were found in the county. What this means is that the virus was present and circulating within the mosquito and avian populations. Like it or not, adulticiding is the only way to remove infected, host seeking female mosquitoes from the population. The goal of mosquito control agencies is no human fatalities due to virus. According to the Centers for Disease Control and Prevention, people over 50 years of age are more likely than other age groups to develop serious illness if infected with West Nile virus. Whose grandmother is expendable?

I do not dispute the author's perception of declining numbers of Lepidoptera in his neighborhood. Over the past 20+ years, during visits back to my childhood home in southwestern Pennsylvania, I have noticed a decline in numbers of butterflies and moths, as well as of fireflies and crane flies. A relative who is an avid hunter and fisherman and who still lives in the area has told me he too has noticed a decline in those insects' numbers. Interestingly enough, that area has never had and does not now have a mosquito control program.

Sincerely,

Lawrence J. Hribar
Marathon, Florida

AN ADDENDUM TO VERNON A. BROU'S ARTICLE ON
CALYCOPIS CECROPS IN LOUISIANA (SLS NEWS VOL. 27 NO.1, 2005)
BY
THOMAS S. WILLIAMS

In references to the foodplants of *Calycopsis cecrops* in Sarasota county, Florida, I have also found it in association with *Schinus terebinthifolius* (Brazilian Pepper bush). I have not reared *C. cecrops* on this plant but often found it sitting on the foliage or nectaring at the blossoms of this plant. In this area it appears to be multiple-brooded also, and can be expected to be found at any time of the year.

(Thomas S. Williams, 1320 Blvd. of the Arts, Apt. 205, Sarasota, FL 34236-4983)

JOHN ABBOT BALLOT

Members please take the time to vote for one of the nominees for the John Abbot Award. A ballot is included with this issue of the newsletter. All four are excellent candidates. Please send your ballots to J. Barry Lombardini, Editor of the SLS News, 3507 41st Street, Lubbock, Texas 79413, by August 30, 2005.

ASSOCIATION FOR TROPICAL LEPIDOPTERA SOUTHERN LEPIDOPTERISTS' SOCIETY 2005 ANNUAL MEETING

GAINESVILLE, FLORIDA Sep 29 - Oct 2, 2005

The Association for Tropical Lepidoptera will hold its 2005 meeting this year, in conjunction with the Southern Lepidopterists' Society, from September 29 to October 2, 2005, in Gainesville, Florida. Most activities will be held at the new McGuire Center and its main conference room, located on the University of Florida campus in the Florida Museum of Natural History. McGuire Center will be open for walk-throughs for participants to see the collections, exhibits, and facilities. Some functions, such as evening receptions and the banquet, will be at other venues in Gainesville.

TENTATIVE SCHEDULE

September 29 Registration, Thursday, 8 - 9 am

9 am - Noon, 1- 5 pm: Museum visiting and workshops

Evening reception: 6 - 7 pm, University Hilton lounge

September 30 Registration and reception, Friday, 8 - 9 am, McGuire Center conference room

9 am - Noon: morning ATL symposium and submitted paper session

12 Noon - 1:30 pm: Lunch

1:30 - 5:30 pm: afternoon session

Evening reception: 6 - 7 pm, University Hilton lounge

October 1

8 - 9 am late registration and reception, McGuire Center conference room

9 am - Noon: morning ATL Symposium and submitted paper session

Noon: Group Photo

12:15 - 2 pm: Lunch

2 - 5 pm: afternoon SLS southeastern Lepidoptera session

6 - 11 pm: evening reception, annual banquet and slide fest (Voodoo Lounge)

October 2

8 - 9 am reception, McGuire Center conference room

9 am - Noon: morning symposium and submitted paper session

Noon - 2 pm: Lunch

2 pm: keynote speech by Dr. Daniel Janzen, University of Pennsylvania

PROGRAM

A final program of abstracts of submitted papers will be available at the meeting. Post-meeting trip is to Guatemala, Oct 3 - 9, 2005.

REGISTRATION

\$20 per registrant (\$30 per couple; students \$5): only covers meeting participation and conference room refreshments (evening receptions are cash bar and banquet is by menu). Please submit payment for registration prior to August 30, 2005, to Dr. John B. Heppner.

ACCOMMODATION

Gainesville offers a wide variety of hotel rooms within a few minutes of McGuire Center and the University of Florida (the University Hilton Conference Center is closest). Information brochures for recommended hotels and Gainesville attractions can be sent upon request. Saturday evening banquet will be your choice of menu.

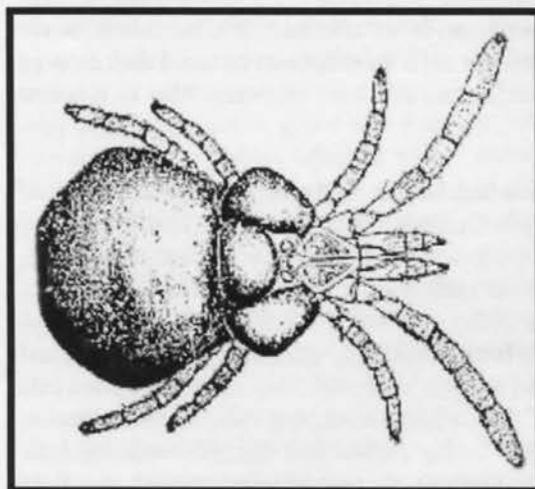
AIRLINES: ASA connections from Atlanta and major airports in Florida (use taxi from airport; no free pick-up)

QUESTIONS: If you plan to attend (need to register), present a paper (up to 20 minute presentation) or poster, wish to go on the post-meeting trip to Guatemala, need hotel information in Gainesville, directions to the McGuire Center, or any other questions please contact Dr. John B. Heppner.

2005 Program Chairman: Dr. John B. Heppner, FSCA
 P.O. Box 147100
 Gainesville, FL 32614

E-mail: trolep@aol.com
 Tel: (352) 846-2000, ext. 243
 (352) 372-3505, ext. 139
 FAX: (352) 373-3249

CHIGGERS
BY
DARLENE RANDLE



Red mite adult: Genus *Trombicula*; usual species in US is *alfreddugesi*.

As a child, Darlene Randle and her siblings caught and played with a bug they named Santa Claus bug. It is a fuzzy red bug measuring 1/64 to 1/8 inches long. As they grew older they wondered what the bug was. When her brother Bud Chandler went to college he took some to his entomology teacher. The teacher was able to identify it as an adult Chigger, a member of the velvet mite family (family Trombididae). Chiggers are also referred to as "red bugs" and "jiggers."

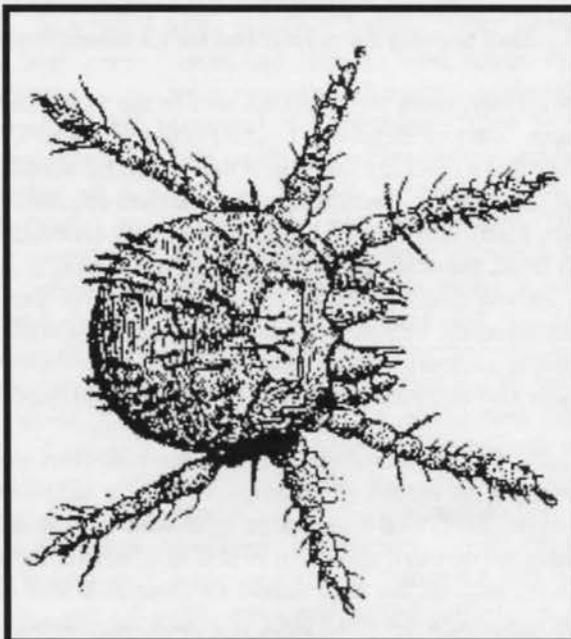
The adult Chigger is not the stage that causes all the torment to humans. The larval stage which is less than 1/150 of an inch in diameter is the real troublemaker. It is a parasite that feeds on man and animals. The chigger which is related to ticks and spiders goes through the same four stages: egg, larva, nymph, and adult. The tiny larval chigger scurries along the skin surface seeking a suitable location, such as a skin pore or hair follicle. It then attaches its

mouthparts to the spot.

According to information from the Texas Agricultural Extension Service the chigger does not penetrate the skin or suck blood as is the common belief. Instead a "feed tube" formed by the chigger's secretion and skin cells of the host allows the chigger to extract food until it is engorged. Then it drops off, usually in about 4 days leaving a red welt with a white, hard central area on the skin that itches severely.

Of all the types of chiggers in Texas there are only two that are annoying to humans. One lives in fields, grass and weed areas, wild berry patches and forest underbrush. The other prefers moist habitats.

Most of us have grown up with Chiggers and like me just supposed that the culprit that bit us was an adult. Until I was shown a live adult Chigger (Harvest Mite) I did not know such an animal existed. I have been told that they are more easily found after a



Parasitic stage larva: Genus *Trombicula*; usual species in US is *alfreddugesi*.

rain in sandy spots, also in garden soil where they are looking for a spot to lay eggs. This summer keep your eyes out for a bright red hairy red bug with eight legs. They look like small velvety red spiders. You will easily see why the Chandler family called them Santa Claus bugs.

[The Editor of the Southern Lepidopterists' News and the membership of the Southern Lepidopterists' Society thank Ms. Darlene Randle and her daughter Ms. Ann Lemon who works at Llano River State Park in Junction, Texas, for their permission to reprint this article on chiggers. We also express our appreciation to Ms. Debbie Cooper Kistler of The Junction Eagle (P.O. Box 226, Junction TX 76849; Phone: 325 446-2610) for allowing us to reprint the article.]

EXCHANGING LEPIDOPTERA AND THE GOLDEN RULE

BY

IRVING L. FINKELSTEIN

As I read the reminiscences by SLS members in recent NEWS issues of their first encounters with Tiger Swallowtails, Great Purple Hairstreaks, Cecropias, *etc.*, I too remembered and reflected on my own memorable lepidopteran experiences, some when I was young and still new to my lifelong commitment, and other more recent ones as well. Yet, not all those "encounters" were happy ones. Indeed, some left a painful and bitter aftertaste, and most have never been mentioned to anyone, but obviously they've not been forgotten. Now for reasons unknown to me, I feel an urge to "let it all hang out." Maybe others reading this have had similar experiences, and have been reluctant to mention them, for a variety of reasons.

I began collecting butterflies at the age of seven and by my late twenties had built a fairly impressive collection of northeastern North American species (I grew up in New York and New Jersey). At the time I first joined the Lepidopterists' Society in 1972, virtually all my specimens had been collected by me, except for some common, showy Asian, African and South American species, most without data, I had purchased in my teens from a New York dealer with my allowance money. When I first saw the exchange notices in the Lep. NEWS, I was very excited at the possibility of enhancing my collection with many North American species from outside my geographic limitations, and with exotic species as well, this time with reliable field data. I responded to quite a few of those ads, and by the late 1970's was exchanging with close to two dozen people, in every part of the United States, and even some in France, Italy, Israel and Japan. My collection, needless to say, grew exponentially. Today I often find myself wondering how I was able to maintain a full-time teaching schedule (at Georgia State University), do research and publish in a field (art history) totally unrelated to lepidoptera, keep my house and yard well maintained and still manage to find the time to collect actively for myself and for all those people out there with whom I was exchanging.

Obviously, there were species here in the Southeast that other collectors really wanted and which I was able to supply them. One of these, the Diana Fritillary, *Speyeria diana*, is locally common in the north Georgia mountains, a two-hour drive from my home in Atlanta, and by about 1980 I had become so well known in the lep community as a source for this species, I was receiving countless requests for Diana pairs, from collectors across the country and beyond. By then I had also learned to rear the species successfully, and in a few really good years I had as many as 30 to 40 pairs on hand, papered, labeled and ready to exchange. Actually, though it was hard work and time consuming to rear them, I derived great pleasure from being able to provide people with absolutely mint-fresh, flawless specimens, and consequently I developed the subliminal hope and even the naive expectation of reciprocity. In some cases, as with my trading partners in Spain and in Japan, I was rewarded with carefully selected, beautiful, perfect specimens, some of them also reared. In the majority of my North American exchanges, however, that was not the case.

Sadly, I learned that many American collectors are not only careless in packing their specimens for shipment, often resulting in extensive breakage, but they also see exchanging lepidoptera as a means of disposing of their worn, broken, dermestid-ravaged, or otherwise undesirable bugs by passing them along to someone else. Yes, I know ... a damaged or worn specimen is still of scientific interest, especially when it may be an uncommon species, and when it comes with all the field data; I've listened to that argument more times than I can remember. But when most or all of the specimens arrive in poor or completely useless condition, or without the data, that argument dissolves. I estimate that over my 20+ years of exchanging, perhaps fewer than 20 people, out of nearly 100, have reciprocated with material of comparable quality to that of the specimens I've sent them. Hard to believe but true.

A few of the most flagrant examples? A collector (he's no longer active, I've heard) requested Dianas, and offered me a selection of Argentine butterflies, collected by a friend of his who'd just been there. I sent the Dianas. When his parcel arrived, it contained about 15 specimens, improperly packed, most without antennae or legs, some misidentified or in envelopes on which were written the names of species not occurring anywhere near Argentina, some with wings stuck to the envelopes, others glued to each other, with strong evidence of mold. I was able to salvage just one specimen from the entire lot. In another instance, I met a lepidopterist a few years ago who boasted of collecting some 35 fresh specimens of a Geometrid considered rather rare, which I had never taken. In fact, it was I who suggested the exchange in that instance, offering two reared pairs of Diana for a pair of the Geometrids. The terms were agreeable, and I sent the two pairs. What I received in return were three males of the Geometrid, intact but rather worn specimens that had been spread but were subsequently relaxed and removed from the pins in order to be sent to me. Obviously, I was deemed worthy of only the discards. And then there was a collector who, after receiving three or four Diana pairs from me, in two separate exchanges, asked for still more, and I began to suspect that they were not intended for his own collection, but I sent one more pair anyway. Not long thereafter I received a letter from a correspondent in Japan, telling me he'd just attended a butterfly fair in Tokyo, where he saw, at one dealer's stall, a pair of reared Dianas, from Georgia, "leg. I. L. Finkelstein," with a selling price of \$80! I wrote back, assuring him I'd not been selling my Dianas to any dealers, nor had I ever sold any butterflies in my whole life. Obviously, someone was taking advantage of my generosity for financial gain, and I felt exploited . . . and frankly angry.

There have, on the other hand, also been a few serendipitous outcomes of exchanges with people who probably believed they were sending me their throwaways. In an exchange some years ago, a collector sent me assorted Southwestern leps of varying quality, including a Viceroy, *Limenitis archippus obsoleta* with deformed wings (or so he must have thought), larger and rounder to one side of the body, smaller and with a more pointy forewing to the other side. When I spread it, I realized it was a bilateral gynandromorph! More recently someone sent me some odds and ends from Arizona, including a single swallowtail with an actually deformed hindwing and tail. What was really odd was that on the envelope, it was initially identified as *Papilio rutulus*, then *rutulus* was crossed out and *multicaudatus* written instead. Out of curiosity, I eventually spread it, and I still cannot decide whether it's an unusually large, aberrant *rutulus* or perhaps a hybrid *rutulus-multicaudatus*.

In sum, I no longer do much exchanging, actually currently doing so on a regular basis with just one person, in Spain. Nor do I rear Dianas anymore, and the few remaining pairs I still have I use as door prizes when I go to annual meetings or as gifts to a few special friends. The twenty-odd years in which I used to exchange very actively were, on one level, a good way to build my collection, and resulted in its containing many species I'd never have otherwise. On another, probably more important level though, it was a valuable learning experience, and taught me a lot I needed to know about human nature . . . the good and the not-so-good. People preach and profess to practice the Golden Rule; if only the Golden Rule applied equally to the exchange of lepidoptera as well!!

(Irving L. Finkelstein, 425 Springdale Drive N.E., Atlanta, Georgia 30305; E-mail: dfritillary@earthlink.net)

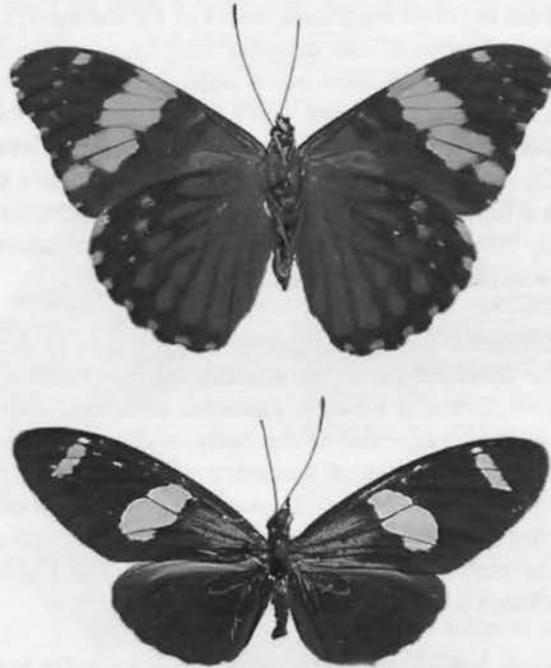
[Editor's Note: Irving's article is reminiscent of Vernon's Brou's problems with loaning specimens which appeared in Vol. 25 NO. 4 (2003) pg. 118-120 "Let this be a lesson - a real sad dilemma: careless destruction of a lifetime's work"]

MEMBERS: Please send me photographs of you and your colleagues in the field. Those of you going to the Lepidopterists' Society meeting in Sierra Vista, Arizona - please take some pictures. Should be many interesting things flying at this time of the year and your photographs will be appreciated.

OTHER INTERESTING FACTS ABOUT TEXAS: The winter home of the whooping cranes is in the Aransas Wildlife Refuge.

El Paso is closer to California than to Dallas.

**ANNOTATED CATALOGUE OF THE
LEPIDOPTERA SPECIMEN COLLECTION IN THE
BIOLOGICAL SCIENCES DEPARTMENT
OF ST. MARY'S UNIVERSITY
SAN ANTONIO, TEXAS**



**BY
JOSEPH F. DOYLE III**

Preface

The collection was first seen by the author in February, 2003, following a reference to its location in the Moody Life Sciences Building by Brother Herbert Janson, S.M. Upon receiving permission to see the collection, it was found that the specimens were inappropriately crowded into two black, glass topped, cardboard series display cases in the Biosciences Lab.

Introduction

A checklist of the specimens by family, genera, species and subspecies was initiated by the author on 14 February, 2003, and finished in February, 2005. Each species or subspecies is listed with a column by current name and a column with the name on the original label. Notes have been added for some taxa.

History

The history of the collection is vague to say the least. Collection dates reflected by the labels span a time period of fourteen years, 1930 to 1943. It is not known who the collectors of the material were. The initials V. S. on some of the Texas specimen labels are the only available and persistent clue to one of the collectors. There was an insect collection at St. Mary's at one time by Carl O. Neumann. This material has no relation to the collection as Neumann's collection was donated to the U.S. government to be used as a mobile educational display. The present location of Neumann's collection is unknown.

The collection is comprised of 108 pinned, spread and labeled specimens of lepidoptera of the Superfamily Papilionoidea: The True Butterflies. There are 44 genera and 62 species. They were collected in the western hemisphere from North America, Mexico and South America.

Current Status

The collection, as it now stands, is in two glass-topped, plywood storage drawers. All original labels are retained on each specimen as well as new determination labels added by the author. Several of the specimens were repaired and repinned. Some specimens have no labels. Some specimens have no location label. These are listed at the bottom of the checklist. The checklist is arranged by country, state or province.

Nomenclature

Taxonomic nomenclature for this checklist follows the literature listed in the References section below. Under the current circumstances, there is no absolutely accepted checklist of North American butterflies, much less a worldwide source. Not being a taxonomist, judgements were made to adopt names and opinions of widely accepted authors.

[Illustrations: Above, *Hamadryas amphinome*, female, ventral view; below, *Heliconius wallacei flavescens*, male dorsal view.]

Checklist of Specimens:

<i>Determination labels</i>	<i>Original labels</i>
-----------------------------	------------------------

North America

Canada

Ontario

Clossiana selene myrina

Brenthis myrina, Ontario, 7-15-40

USA

Arkansas

Harkenclensus titus, 1 male

Arkansas 6-2-33

California

Vanessa annabella, 1 male, 1 female

Cynthia carye, Cal, 5-1-30

Florida

Parhassius —album, 1 male

T. m-album, Fla, 4-10-37

Illinois

Strymon melinus

T. melinger, Illinois, 10-7-41

Idaho

Glaucopsyche piasus, 1 male

Lyc. saipiolus rufesoicus, Ida, 7-11-32

Oregon

Papilio zelicaon, 1 male, 1 female

Pap. zelicaon, Oregon, 6-10-41, 7-22-41

Texas

Chioides catillus albofasciatus, 1 male
Chioides catillus albofasciatus, 2 females

Chioides catillus albofasciatus, 1 male

Urbanus proteus, 2

Urbanus dorantes, 1

Wallengrenia otho, 1 male

Atalopedes campestris, 2 males

Vanessa virginensis, 1 ?

Vanessa cardui, 1 female

Battus philenor, 2 females

Papilio polyxenes asterius, 3 males

Papilio polyxenes asterius, 4 females

Papilio cresphontes, 1 female

Atlides halesus, 3 males

(The two dated specimens may be the first known records from Bexar Co., Texas)

Atlides halesus, 3 females

Mitoura grynea castalis, 1 male

(This specimen may be the first known record from Armstrong Co., Texas)

Libytheana carinenta, 1 female

(This specimen may be the first known record from Medina Co., Texas)

Polygonia interrogationis, 1 ?

Polygonia interrogationis, 1 female

Junonia coenia, 2 ?

Anartia jatrophae luteipicta, 1 male,

(First known record from Bandera Co., Texas)

Euptoieta claudia, 1 male

Euptoieta claudia, 3 females

Phyciodes tharos, 1 male

Chlosyne nycteis

Chlosyne lacinia adjutrix, 1 male, 3 females

Texola elada, 1 male

Limenitis arthemis astyanax, 2 females

Anaea andria, 1 male

Anaea andria, 1 male

Anaea andria, 1 male, 1 female

Anaea andria, 1 female

(This specimen may be the first known record from Bell Co., Texas)

Wisconsin

Lycaena xanthoides dione, 1 female

Nymphalis vau-album, 1 female

State unknown

Atrytone zabulon, 1 male

Eudemus albofasciatus, Helotes, Tex, V.S.

One labeled *Eudemus albofasciatus*, one labeled *Eudemus albofasciatus*, S.A. Tex

Helotes Tex V.S.

Eudemus proteus, S.A. Tex

Eudemus proteus, S.A. Tex

Euphyes verna, S.A. Tex

Atalo. Buron, S.A. Tex

Van. *Cardui*, S.A., Tex

Van. *Huntera*, Hondo, Tex

S.A. Tex

Two labeled S.A. Tex, one labeled *Pap. Bairdi*, S.A. Tex

Three labeled S.A. Tex, one unlabeled

Pap. Cresphont, dwarf, S.A. Tex

Two labeled *Th. halesus*, Hondo, Tex, 5-20-41, one labeled

Th. halesus, Hondo, Tex V.S.

One labeled *Th. halesus*, Hondo, Tex, two labeled

Th. halesus, Hondo, Tex V.S.

T. damon castalis, Palo Duro Can., Tex, 4-11-43

L. bachmanni, Castroville Tex 4-7-43

G. interog. ambrosi, Salado, Tex

G. interog. ambrosi, S. A. , Tex

Jun. coenia, S.A., Tex

An. Jatrophae, Medina, Tex, 10-22-39

Eupt. Claud, S.A., Tex

One labeled *Eup. claud*, S.A., Tex, two labeled *Eup. claudia*, Helotes, Tex

P. tharos marcia, Salado, Tex

E. nycteis, Salado, Tex

Synchloe lacin, Salado, Tex

M. elada, Salado, Tex

Bas. astyanax, Salado, Tex V.S.

S.A., Tex

S. A., Tex V.S.

Salado, Tex

Salado, Tex 10-24-40

Heades dione, 6-22-42, Wisc

Vau. J. album, 9-5-42, Wisc

Hesperia viridis, 6-15-39, Waste sp.?

Mexico

Eresia phillyra, 1 female, Tamps. ?
Eumaeus debora, Tamps. ?
Euides aliphera, 1 female, San Luis Potosi

Victoria, Mex 6-11-35
 Victoria Mex June 36
 Tamazunchale, Mex 6 6 41

South AmericaBrazil

Hamadryas feronia, 2 males

Ageron. feronia catablymata, S.C. Brazil
 (Santa Catarina, Cachimbo ?)

Hamadryas epinome, 1
Hamadryas fornax fornax, 1

Ager. Epiromis, Rio Hercilio, S.C. Brazil
 Ager. Fornax, Itatraya, Rio Brazil
 (Itatiaia, Brazil ?)

Hamadryas amphinome amphinome,
 1 female

Ager. amphinome, Aracatuba, SP Brazil

Heliconius sara apseudes, 1 female
Heliconius helpomene anduzei, 1 male
Heliconius helpomene anduzei, 1 male
Heliconius helpomene euyades, 1 female
Heliconius wallacei flavescens, 1
Cithaerias aurorina, 1 male (very rare)
Haetera piera, 1 female
Haetera piera, 1 female
Cissia metaleuca ?, 1
Cissia metaleuca ?, 1

Helicon. apseudes, S.C. Brazil
 Heliconius melponene, Obidos (Brazil ?) IV
 Helicon melpomene, Amazon Brazil
 Helicon melpomene, Amazon Brazil
 Helic Rhea, Santarane Amazon Brazil
 Callitaera aurorina Iquitos, Upp Amazon V, (Brazil ?)
 Haetera piera R. Obides VI Low. Amazons (See Smart)
 Haetera piera R. Obides VI Low Amazon (See Smart)
 Hesione Sulz a Weyus Coli G S:C: VIII (Brazil ?)
 G. hesione Sulz, Subobsuara Weyae Hausa-Humboldt 1-
 VIII (Brazil ?)

Moneuptychia soter, 1

Euptychia celmis God., S. Paulo X (Brazil ?)

Paraguay

Hamadryas amphinome amphinome, 1 male
Dynamine egaea, 1 male
Dynamine egaea, 1 female
Diaethria candrena, 2?
Diaethria meridionalis
Callicore hydaspes
Callicore codomannus, 1 male
Callicore codomannus, 2 females
Anartia amathea, 2 males
Dryadula phaetusa, 1 male, 1 female ?

Ageronia amphinome, Paraguay
 Dynamine, 4-14-39, Paraguay
 Dynamine, 4-14-39, Paraguay
 Dynamine, 10-2-38, Paraguay
 Calicore clymene, 10-13-38, Paraguay
 Calicore hydaspes, 10-30-38, Vem., Paraguay
 Catagramma sorona, male symbol, 6-39 Paraguay
 Catagramma sorona, 1-39, Paraguay
 Anartia 4-19-39 Paraguay
 Coleonis (=Colaenis) phelura 4 -21-39 Paraguay (female
 symbol)
 Coleonis (=Colaenis)
 Coloenis (=Colaenis) julia (male symbol) Paraguay
 Heliconia phyllis, 1-12-38 Paraguay
 Heliconius phyllis, 11-38 Paraguay

Dione julia titio, 1 male, 1 female
Dione julia, 1 male
Heliconius erato phyllis, 1 male
Heliconius erato phyllis, 1 male

Peru

Parides yaminahua, 1 male
Hamadryas feronia, 1 female
Siproeta epaphus, 1

P. srithalion, S. America, (So. Peru ?, See Tyler)
 Ageronia feronia L., Satipo, Peru
 Victorina epaphus Latr., Oxapampa, Peru '32

No label

*Parides montezuma**Papilio pharnaces*

no label

P. pharnaces Orizaba Mex

No location

Dione juno, 1?

Coleonis (=Colaenis)

Acknowledgements

Appreciation is given to Dr. Rosemary Wahl for permission to study and improve the status of the collection. Gratitude is extended to Dr. Lucien M. Manchester for his interest and assistance. Gratitude is expressed to Brother Herbert Janson of St. Mary's University who initiated contact with the Department to receive permission for the author to inspect the collection. Brother Janson is one of my former teachers at Central Catholic High School, San Antonio, Texas. Thanks to Jeremy Kuhn of San Antonio, Texas, for access to reference material in his library.

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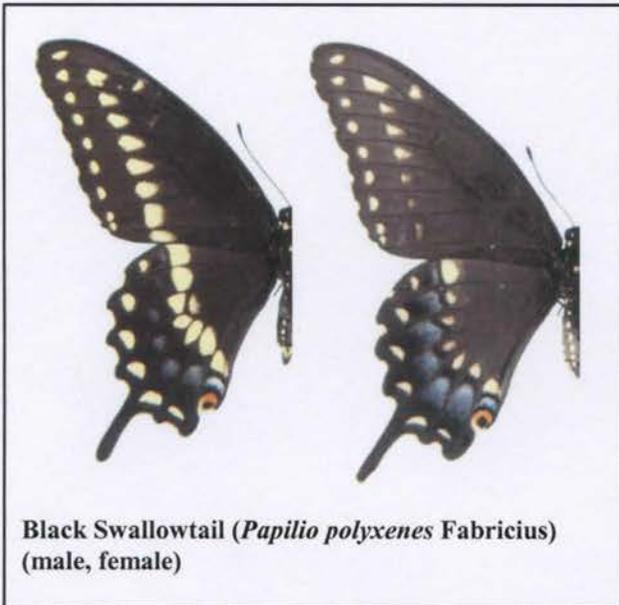
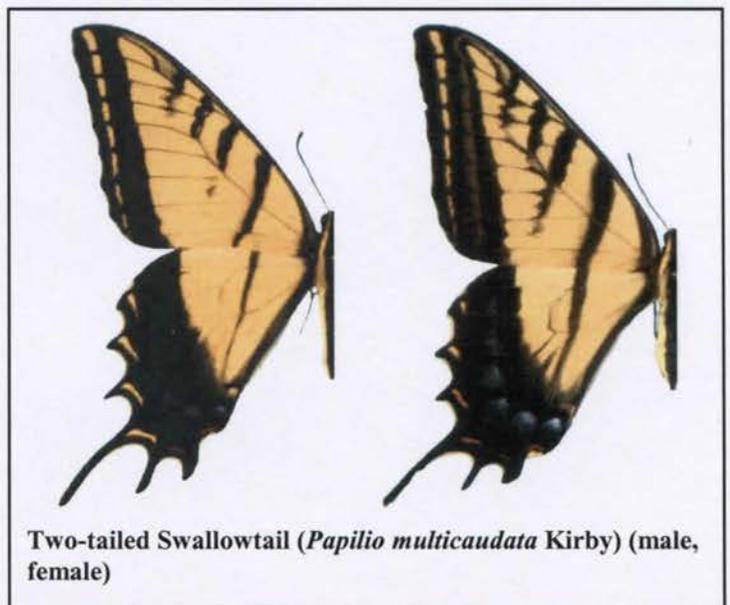
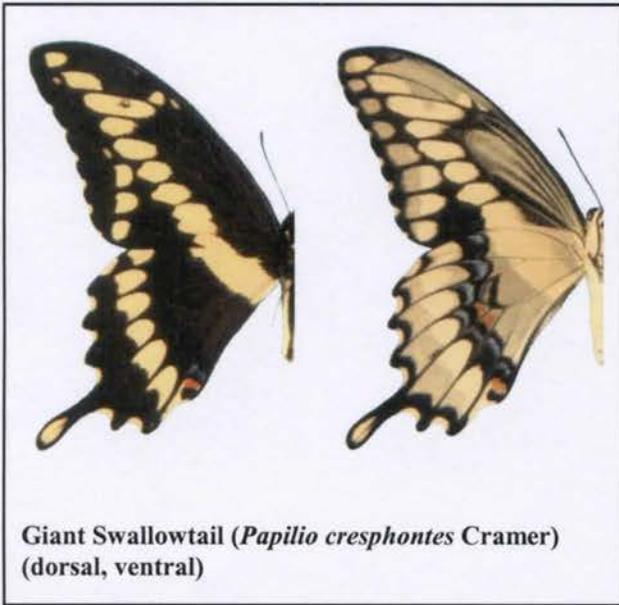
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BUTTERFLY FESTIVAL IN THE LOWER RIO GRANDE VALLEY OF SOUTH TEXAS

The 10th anniversary of the Butterfly Festival will be held October 20-23, 2005, in Mission, Texas, in South Texas. There are approximately 290 species of butterflies, 400 species of birds, and approximately 80 species of dragonflies in this region. For information: E-mail: bmuro@missionchamber.com.



Swallowtails of Lubbock County, Texas

J. Barry Lombardini



New laid egg



Ready to hatch egg



Newly hatched larva in web



Later larva in web



Later larva free of web



Full-grown larva (different color from earlier stages)



Prepupa



Pupa

Life cycle of the Painted Lady (*Vanessa cardui* [Linnaeus]).

All photographs are by Peter Bryant,
University of California, Irvine.

[The Editor and membership of the SLS
wish to thank Peter Bryant for allowing
us to use his photographs in our newsletter.
His website is:
[http://mamba.bio.uci.edu/~pjbrvant/biodiv/
lepidopt/nvmph/plady.htm](http://mamba.bio.uci.edu/~pjbrvant/biodiv/lepidopt/nvmph/plady.htm)]



Adult, dorsal surface



Adult, ventral surface

BALLOT FOR THE 2005 JOHN ABBOT AWARD

NOMINEES

Dr. Richard Brown: Dr. Richard Brown is curator of the Mississippi Entomological Museum collection at Mississippi State University in Starkville, Mississippi. His major interest is with the Tortricidae.

Dr. Jackie Miller and Dr. Lee Miller: The Millers are researchers at the McGuire Center for Lepidoptera Research in Gainesville, Florida, and were the curators of the Allyn Museum Collection in Sarasota, Florida, for many years. The Millers have been interested and are currently studying the lepidoptera of the West Indies.

Harry Pavulaan: Harry Pavulaan has been doing research with butterflies in his area of the eastern United States, specifically with Celastrina and Papilios.

Please send ballots to: J. Barry Lombardini
3507 41st Street
Lubbock, Texas 79413

Deadline: August 10, 2005

MATECUMBE KEY MYSTERY

BY

RICHARD M. GILLMORE

For decades there has been controversy raging between lepidopterists over whether or not Schaus' Swallowtail (*Papilio aristodemus ponceanus* Schaus) really has ever been captured on Matecumbe Key. For years after the original description, this butterfly remained extremely rare in collections until the late Florence Grimshawe appeared on the scene. During the interval between the 1930's and 1950's, Mrs. Grimshawe was the primary supplier of specimens of this rare species. Those who knew her best, including the late Ralph Chermock, Dean Berry, and H. L. "Verne" King, complained frequently about how secretive Mrs. Grimshawe was in terms of supplying information about where to look for this fascinating species, and they apparently thought that she went to extremes to protect her business interests.



Schaus' Swallowtail (*Papilio aristodemus ponceanus* Schaus) (dorsal surface) (Photograph by Jeff Slotten)

One must understand that Mrs. Grimshawe was regarded by her peers as a somewhat notorious wheeler-dealer with extensive sale lists of hard-to-obtain Florida species. It has been frequently implied that her locality labels left something to be desired, especially after other collectors during the period bought specimens from her, and later began to search on their own for the species she had originally sold to them.

On a rare occasion, shortly after I had moved to Florida from Pennsylvania, by pure chance I ran into the late Verne King while on a collecting trip with Ron Gatrell. Ron and I had been looking for hairstreaks along the famous railroad tracks near Istachatta in Hernando county. Lo and behold, it just so happened that on that same day Mr. King had also decided to visit this interesting locality, and thus our paths crossed.

We collected together that afternoon and then ate supper at a restaurant in Inverness, later obtaining rooms at a small roadside motel near Floral City. Before retiring that evening, we spent a lot of time swapping stories and information, and talking about collecting spots and collectors we knew. Mr. King's extensive experiences led to discussion of many interesting tales.

Before long, Mrs. Grimshawe's name came up in the discussion, and Verne commented on how secretive she had been with him, especially regarding his early attempts to learn more about where to locate *ponceanus*. All of the early specimens she had been sending out to collectors came with labels that read Matecumbe Key. King and others who had the opportunity to investigate Matecumbe Key had spent countless hours trying to locate *ponceanus* without success.

Frustrated by his lack of luck - not so much as a fleeting glimpse for all of the time and effort spent looking - he became more curious and somewhat skeptical as to why Mrs. Grimshawe was the only person who seemed able to find it. Finally, at wit's end, Verne decided to contact whom he referred to as Mrs. Grimshawe's "boyfriend", presumably her husband. The approximate time frame for this reference would have been the late 1930's, a few years after Grimshawe had begun supplying specimens to museums and collectors. Anyway, Mr. King did eventually make contact with the "boyfriend", and according to King, the boyfriend told him that Mrs. Grimshawe never had collected specimens on Lower Matecumbe Key, and that to his knowledge all of the specimens had been found in the area referred to as Upper Key Largo. Mr. King arranged for a trip to meet discretely with his new contact, and for him to guide Mr. King to the spot on Key Largo where he had gone with Mrs. Grimshawe. Mr. King described the area to us as a small gravel road which at that time was not traveled very much.

With the "boyfriend" acting as his guide, Mr. King finally saw and collected his first specimen of *ponceanus* at this

site. Just as he was beginning to take the butterfly out of his net, Mrs. Grimshawe happened to drive up. Infuriated by what she saw taking place, she literally leapt out of the car and rushed up to Verne, grabbed his net with the butterfly still in it, threw it on the ground and proceeded to crush the butterfly with her heel against the ground, while yelling at him that "This butterfly is no damn good!". King was too stunned to speak, but told us that if he hadn't been a gentleman he would have punched her on the spot.

I asked Mr. King again about the Lower Matecumbe records and to tell us what he thought about them, since I had read the articles by Henderson (1945ab, 1946) listing records for *ponceanus*. Mr. King replied that almost certainly all of these specimens had been supplied by Mrs. Grimshawe, and that in all probability they had been deliberately mislabeled by her to throw other collectors off the true path, realizing that the insect had a short flight period and that she was the only one living in the general area with specific knowledge of the actual locality. She made much of her living selling specimens, and was apparently simply protecting her interests. When asked other collectors' names

associated with specimens from Matecumbe, he implied that they still had more than likely been collected by Grimshawe, but the collectors who had received them had simply put their names on the specimens, which was a common practice at that time. Furthermore, so many of Grimshawe's specimens had been traded around by others who had obtained them there really was no firm basis for assuming the insect had ever really occurred on Matecumbe, especially after his many unsuccessful trips there on his own to seek it.

Mr. King obviously felt that all of the Grimshawe specimens which had been traded around or sold during that era had in fact been taken on Key Largo, not on Matecumbe. He and others had looked too hard on Matecumbe without success to believe that it had ever occurred there in the first place.



Schaus' Swallowtail (*Papilio aristodemus ponceanus* Schaus)
(ventral surface) (Photograph by Jeff Slotten)

Shortly after his encounter with Mrs. Grimshawe on Key Largo, her now-famous article (Grimshawe, 1940)

appeared. King felt that the "cat was now out of the bag", and that the pressure was now on Grimshawe to explain her Matecumbe records, since all of her specimens now were bearing Key Largo labels. He felt that the article was written for several reasons: 1) to relieve the tension she felt after being confronted with knowledge that others now knew her "secret", 2) to maintain her credibility, and 3) to hopefully increase the selling price of her specimens by implying that one less colony was available for exploitation. This speculation continues today.

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(Richard M. Gillmore, 1772 Willa Circle, Winter Park, FL 32792-6345)

STATE INSECTS: Do you know what your officially designated State Insect is? Forty-one of the 50 States have State Insects. Here are a few for our region: Alabama – Monarch and Eastern Tiger Swallowtail; Arkansas – Honey Bee; Florida – Zebra Longwing; Georgia – Honey Bee and Tiger Swallowtail; Mississippi – Honey Bee and Spicebush Swallowtail.

THE PROTECTIVE COLOURS OF ANIMALS

BY

ALFRED RUSSEL WALLACE

Editor Charles H. Smith's Note: This commissioned essay appeared in Volume 2 of the collection Science for All in 1879. To link directly to this page, connect with: <http://www.wku.edu/~smithch/wallace/S318.htm>

To the ordinary observer the colours of the various kinds of molluscs, insects, reptiles, birds, and mammals, appear to have no use, and to be distributed pretty much at random. There is a general notion that in the tropics everything--insects, birds, and flowers especially--is much more brilliantly coloured than with us; but the idea that we should ever be able to give a satisfactory reason why one creature is white and another black, why this caterpillar is green and that one brown, and a third adorned with stripes and spots of the most gaudy colours, would seem to most persons both presumptuous and absurd. We propose to show, however, that in a large number of cases the colours of animals are of the greatest importance to them, and that sometimes even their very existence depends upon their peculiar tints.

It is an almost universal rule that each animal either has enemies which seek to feed upon it, or that it seeks itself to feed upon other animals. In the first case, it has to escape its enemies or it cannot long continue to live. This it does either by its swiftness of flight, by its watchfulness, or by hiding itself from view. Some species come abroad only at night, some burrow under ground, many hide themselves among leaves, or bark, or stones, and thus escape destruction. Their enemies, however, are as swift and as watchful as they are themselves, and they can in most cases only escape them by avoiding observation. To do this, they must not be too conspicuous; and thus any kind of colouring that renders them hardly visible while seeking their food or attending to their young, actually

tends to preserve their lives, and often alone enables them to secure the safety of their offspring. But the enemy who is in pursuit of them is in just the same predicament. He, too, must be concealed by his colour, or he will be seen afar off and his prey will seek a secure concealment. In that case he will simply starve to death, and his race will cease to exist. It thus appears that almost every kind of animal requires concealment; and it might therefore be thought that colour must always be injurious, and ought never to exist. And as colour not only exists, but abounds among the various classes of animals, it may be thought that we have a *reductio ad absurdum*, and that protective colouring cannot be of much importance.

Further examination, however, shows us that even gay colours are very often protective, because the earth and the sky, the leaves and the flowers, themselves glow with pure and vivid hues. In other cases conspicuous colouring is useful to an animal, as when it is protected by the possession of a deadly sting or a nauseous taste, and the bright or unusual colour warns its would-be enemies to avoid it. There are also a great number of animals who appear to be sufficiently able to take care of themselves without resorting to concealment, and with these the tendency to the production of colour, which seems to be inherent in organic beings, exhibits itself unchecked. Taking all these facts into consideration, we find that there is an ample field for the development of bright and conspicuous colour on the one hand, and for the display of an infinite variety of protective tints on

the other, dependent on the structure, the habits, and the instincts of the different kinds of animals.

Let us now consider a few familiar examples of protective colouring. Owing to the mildness of the winter of 1877, and the dampness of the following spring, my garden was overrun with slugs, and I had to wage continual war against them. On every damp evening I would go round the borders, examining the choicest plants, and, taking the slugs off with a knife, deposit them in a jar of strong brine. While doing this, many of them, on being touched, would contract and drop to the ground, and though they fell close under my eyes, I often had some trouble to find them again, owing to their close resemblance to the small pebbles with which the soil abounded. They varied in colour from nearly white, to brown, yellow, and nearly black, and when contracted into an oval lump, they were exactly like the variously-coloured wet pebbles. One black slug with an olive-yellow under-surface, when contracted was wonderfully like a blackish flint pebble broken in two, showing the yellowish inside so common in such stones. It may be said that this was only an accidental resemblance, and at first it did not strike me as being anything else; but when, time after time, I lost sight of a slug beneath my very eyes, and had often no other means of finding it again but by touching the various small stones with my knife till I found a soft one, the conviction forced itself upon me that here was a case of true protection, and that what deceived me would also probably sometimes

deceive the birds and other animals that feed upon slugs. In the tropical forests I had often in the same way to resort to the sense of touch to supplement that of sight, in distinguishing between the Phasmidæ or "stick insects" and real pieces of stick; and as in this case it is universally admitted that the resemblance is a protection to the insects, since it saves them from the attacks of the numerous tropical insectivorous birds, we may well believe that our familiar slugs are similarly protected from the thrushes and other birds which feed upon them.

We will now consider some other cases of protection by colour among animals of our own country, before proceeding to those more wonderful developments which occur chiefly in tropical lands. Every collector of beetles must have observed how many of our *Curculionidæ* or weevils are brown or speckled, and also that they have the habit, on being touched or alarmed, of falling down on the ground, drawing in their legs and antennæ, and there becoming undistinguishable from small lumps of earth or stones. Others, however, which are found constantly on nettles

and herbage, are beautifully green, and these usually run or fly away when alarmed. A curious little beetle, *Onthophilus sulcatus*, is brown and furrowed, so as exactly to resemble the seed of some umbelliferous plant. The beautiful Musk-beetle, which usually rests upon the leaves of willows, is green; while the Saperdas and Rhagiums, which frequent timber or posts, are invariably brown or yellowish. It is, however, among our moths, which are at once more conspicuous and more defenceless, that the best examples of protective colouring in this country are to be found. The beautiful green *Agriopsis aprilina* and the dusky *Acronycta psi* rest during the day on the trunks of trees, and are often completely concealed by their resemblance to the green and grey lichens which surround them. The Lappet-moth (*Gastropacha querci*), when at rest, so disposes its rich brown wings as to resemble, both in shape and colour, a dead leaf (Fig. 2); while the Buff-tip moth (*Pygæra bucephala*) so contracts its wings that it looks exactly like a thick piece of broken stick, the yellow patch at the extremity of the wings giving the appearance of the freshly-broken end (Fig. 1).

This is a case which well illustrates how impossible it is to decide from the appearance of a specimen in a cabinet whether the colours of an animal are or are not protective, for no one would imagine that this handsome and conspicuously-coloured moth could ever deceptively resemble a bit of dead stick, and so obtain protection from its enemies. It is a very common thing in the tropics to find beetles and moths which resemble bird's droppings, and the same occurs in this country; for Mr. A. Sidgwick, in a paper read before the Rugby School Natural History Society, says: "I have myself more than once mistaken *Cilix compressa*, a little white-and-grey moth, for a piece of bird's dung dropped upon a leaf, and, *vice versâ*, the dung for the moth. Two other moths, *Bryophila glandifera* and *B. perla*, are the very image of the mortar walls on which they rest; and in Switzerland I amused myself for some time in watching a moth, probably *Larentia tripunctaria*, fluttering about close to me, and then alighting on a wall of the stone of the district, which it so exactly matched as to be quite invisible a couple of yards off." It has also been noticed that the general tints of the moths which are on the



Fig. 1. The Buff-tip Moth.



Fig. 2. The Lappet Moth.

wing in autumn and winter correspond to the prevailing hues of nature at those seasons. The Rev. Joseph Greene states that the great majority of the autumnal moths are of various shades of yellow and brown, like those of the autumnal foliage; while the winter moths of the genera *Cheimatobia* and *Hybernia* are of grey and silvery tints.



Fig. 3. *Jacobaea* Caterpillars.

It is among the caterpillars, however, that protective colouring is the most general and conspicuous. An immense number of these creatures are green, corresponding with the tints of the leaves on which they feed, or brown when they rest on bark or twigs; while a large number of the larvæ of the Geometridæ or Loopers have the habit of sticking themselves out rigidly like sticks, which they exactly resemble in shape as well as in colour. Every one knows, however, that there are a number of very brightly-coloured caterpillars, and it may be asked how these are protected, or why the others need protection if these can do without it. The answer to this question is most instructive, and affords the most conclusive proof that various examples of protective tints in nature really have the effect we impute to them. It has been found

by repeated observation and experiment that every green and brown caterpillar, without exception, is greedily eaten by birds, and even by frogs, lizards, and spiders, and that they endeavour to conceal themselves from these numerous enemies by feeding usually at night, while during the day they remain motionless upon leaves, twigs, or

bark, of the same colour as themselves. The brightly-coloured caterpillars, on the other hand, were found to be universally rejected by birds when offered to them, and even by lizards, frogs, and spiders. None of these would touch the common spotted caterpillar of the magpie moth (*Abraxas grossulariata*), nor those of the *Cuccullia verbasci*, *Callimorpha*

jacbeæ (Fig. 3), or the *Anthrocera filipendulæ*. Sometimes the caterpillars were seized in the mouth, but always dropped again, as if in disgust at their taste. The same rule was found to apply to all the hairy or spiny caterpillars; and, what is very interesting, the habits of these creatures are correspondingly different from those of the green and brown eatable species. They all feed during the day; they do not conceal themselves, but feed openly, as if courting observation, and secure in the knowledge of their safety from all enemies.¹

This connection of gay colours and bold habits with non-edibility, throws light on many other cases of bright colouring which might otherwise be adduced as opposed to the theory of protection. Thus, among our beetles we have such conspicuous creatures

as the lady-birds (*Coccinellidæ*) and the "soldiers and sailors" among the Malacoderms, which are all conspicuous and defenceless insects, never hiding themselves, or seeking concealment, or feigning death, as do so many other beetles. The reason is now found to be that, like gaudy caterpillars, they are generally unfit for food. The same explanation may be given of the conspicuous whiteness of certain moths. One of these, *Spilosoma menthrasti*, is very common, but when given by Mr. Stainton to a brood of young turkeys among hundreds of other worthless moths after a night's "sugaring," it was always rejected, each bird in succession picking it up and then throwing it down again, as if too nasty to eat. The same thing has been observed with the showy butterflies forming the family *Danaidæ*. Insect-eating birds were observed by Mr. Belt in South America, catching butterflies which they brought to their nest to feed their young; yet during half an hour they never brought one of the *Danaidæ*, which were flying lazily about in great numbers.

But there are other modes of protection, besides a nauseous taste which renders concealment unnecessary. Either weapons or armour have the same effect, if they are sufficiently perfect of their kind to render it useless or dangerous for their enemies to attack them. The best example of armed insects are the bees and wasps, and among these conspicuous colours are the rule, while they usually fly about and seek their food without any attempt at concealment. Other insects have so hard a covering, or such awkward spines, as to be practically uneatable, and among tropical insects many of these are conspicuously or gaudily coloured. One of the few examples we have of this group are the little Ruby-tail wasps (*Chrysis*) which have no stings, but have the power of rolling themselves up into a ball, which is very hard; and they are so

gorgeously coloured as to appear like some curious jewels. Others, again, obtain protection by extreme rapidity of flight, and by concealing themselves in holes or among flowers when at rest, and these are often brilliantly coloured, as in the case of the common Rosechafer. These few examples are merely intended to show that it is no argument against the use of protective colours in some animals, that many others have brilliant and clearly non-protective hues. In those cases, the creatures have certainly some substitute which enables them to live and continue their race. What this substitute is we can in some cases find out, but in many others we are too ignorant of the habits and surroundings of the species to determine whether its peculiar colours are or are not protective, or, if they are not, to determine what are the peculiar conditions which enable it to dispense with this particular kind of safeguard. An excellent example of a brilliantly-coloured insect, which yet obtains protection by its colours, is afforded by the caterpillar of the Emperor moth (*Saturnia pavoniaminor*). The green body adorned with pink spots is pre-eminently beautiful, and in most situations conspicuous; but it feeds on the common heather, and its colours then so completely harmonise with the young green shoots and small pink flowers, that it is with difficulty detected.

Leaving now these familiar examples, to be found everywhere around us, let us cast a glance over a wider field, and see how the general conditions of existence, affecting many different groups of animals at once, influence their coloration for protective purposes. And first let us transport ourselves to the great deserts of the earth, and inquire what kind of animal life we find there. Canon Tristram has traveled much in the Sahara, and he thus describes the characteristic colours of its animal life: "In the desert, where neither

trees, brushwood, nor even undulations of the surface, afford the slightest protection against its foes, a modification of colour which shall assimilate an animal to that of the surrounding country is absolutely necessary. Hence, without exception, the upper plumage of every bird, whether lark, chat, sylvian, or sand-grouse, and also the fur of all the smaller mammals, and the skin of all the snakes and lizards, is of one uniform isabelline or sand colour." This is not a characteristic of one desert, but of all. In a recent account of the Steppe of Erivan in Asia Minor, it is said that "a remarkable feature of the animal inhabitants of the Steppe, insects and reptiles, and especially of the lizards, is the most perfect coincidence of their colouring with the colouring of the Steppe." More prominent examples of this prevalent tint are such animals as the camel and the lion, which are exactly of the usual tints of sand and sandy rock.

Let us go now to the arctic regions, and we find these reddish-yellow tints entirely wanting, and instead of them pure white, or in a few cases dark-brown or black, where conspicuousness seems of more importance than concealment. All the bears of the globe are brown or black, except the polar bear, which is white. The polar hare, the snow-bunting, the snowy-owl and the jer-falcon, are also white or nearly so; while the arctic fox, the ermine, and the Alpine hare, change white in winter, as does our own Highland ptarmigan. This last bird is a fine example of protective colouring, for its summer plumage so exactly harmonises with the lichen-covered stones among which it delights to sit, that a person may walk through a flock of them without seeing a single bird; and when it changes to white in winter it is equally protected amid the snow which covers the mountains. A striking exception to the usual white covering of arctic animals is the Musk-sheep, or Musk-

ox as it is often erroneously called. This animal is of a dark-brown colour, easily seen among the snow and the ice, but the reason of this is not difficult to explain. The Musk-sheep is gregarious, and derives its protection from this habit. A solitary strayed animal would soon become the prey of the polar bears or even of the arctic foxes; it is therefore of more importance that it should see its comrades at a distance, and so be able to rejoin them, than that it should be concealed from its few enemies. Another case is that of the sable, which retains its rich brown fur throughout the severity of a Siberian winter, but at that season it frequents trees, feeding on fruits and berries, and is so active that it catches birds among the branches. Again, the common raven is found in the extreme arctic regions, but is always black; and this is probably because it has no enemies, while, as it feeds on carrion, it does not need to be concealed from its prey. These three cases are exceedingly valuable from a theoretical point of view, for they prove the incorrectness of a common notion that animals may change to white in the arctic regions either from the direct effect of cold, or from some influence of the white reflections from the snow; and they teach us that only those animals become white to whom that colour is useful, while those which either do not require protection or to whom dark colours are actually beneficial, remain totally unaffected. The cause of change must therefore be sought, not in the direct action of external conditions, but in the same general laws of variation and selection which have modified all the other characters of animals in the way most beneficial to them.

Nocturnal animals offer equally good examples of protective colouring. Mice, rats, bats, and moles, are all of dusky or blackish hues, and are therefore very difficult to be seen at night; when alone they move about, while during the day they conceal

themselves in holes or underground. When concealment by day as well as by night is required, as in the case of owls and goatsuckers, we find dusky mottled tints, assimilating with bark or earth during the day, and not very conspicuous at night. In some few cases nocturnal animals are conspicuous, a striking example of which is the North American skunk, which has much white about it and a large white tail which it carries erect in the most conspicuous manner possible. But the horrible odour emitted by this animal makes it universally dreaded, and its conspicuous tail is thus a signal-flag to all carnivorous animals not to attack it--a parallel case, in fact, to the white moth, which we have already seen was rejected by birds which eat so many other moths.

Equally striking as a proof that colour is largely protective is the fact, that nowhere but among the evergreen forests of the tropical and sub-tropical zones do we meet with birds the ground-colour of whose plumage is green. Parrots, which are confined to such countries, are generally green, with small patches of vivid colours. In the Eastern tropical islands many pigeons are as green as parrots, and there are numbers of other groups which are of the same colour. Such are the barbets, a family of fruit-eating birds, especially abundant in tropical Asia; the green bulbuls (*Phyllornithidae*); the Bee-eaters; the Turacos of tropical Africa, the little White-eyes (*Zosterops*) of the eastern tropics; and many other groups. These all frequent thick foliage, with which their colours so exactly harmonise that it is most difficult to detect them.

Contrast these with the ordinary colouring of the birds of the region of deciduous trees, of which our own country is a fair example. Here anything approaching a pure green is unknown, while brown or olive is the almost universal body-colour of the plumage. This is the tint which is

least conspicuous among the leafless trees and bushes, which prevail for so large a part of the year, and when the need of protection is greatest.

Among reptiles these protective tints are very apparent. Our lizards and snakes are all more or less brown or olive tinged, while in the tropics alone they are often of a vivid green, exactly corresponding with the vegetation they dwell among. The curious geckos--flat lizards with dilated toes, which cling to the trunks of trees or to rocks--are often finely marbled with green and grey, so as exactly to resemble the lichen-covered surface on which they cling. Some arboreal snakes of the genus *Dipsas* are, however, nocturnal; and these, like all other nocturnal animals which require to be concealed, are of dusky colours, being of various shades of black, brown, and olive.

Many fishes even, present clear examples of protective colouring. Such as rest on the bottom, like the flounder, skate, sole, or Miller's Thumb, are invariably of the colour of the bottom, and often singularly speckled, so as to resemble sand or gravel. Such as swim near the surface of the water are almost always dark-bluish or greenish above, and white beneath, colours which evidently tend to their concealment from enemies in the air above them or in the water below. The brilliantly-coloured fishes from warm seas are many of them well concealed when surrounded by the brilliant sea-weeds, corals, sea-anemones, and other marine animals, which make the sea-bottom sometimes resemble a fantastic flower-garden. The pipefish and sea-horses (*Hippocampus*) are excellent examples of this style of colouring. Some of them are greenish, resembling floating sea-weed; but in Australia there is a large species which is covered with curious leafy appendages, and all of a brilliant red colour, and this lives among red sea-weed, and is then perfectly concealed.

It is, however, among tropical insects that the most perfect and wonderful cases of protection by colour and marking are to be found, and a very few examples of these must now be given. The best known and most celebrated are the leaf-insects of the genus *Phyllium*--curious large insects, whose wings and wing-covers are broad and flat, shaped and veined exactly like leaves, while their legs, head, and thorax have all flat dilatations, like the stipules of many plants; and the whole being of the exact green tint of the foliage of the plant they live on, it is actually impossible to detect them when they are not in motion. The walking-stick insects, or spectres, are equally curious. These are long cylindrical insects, often nearly a foot long, and of the exact colour of pieces of greenish or brown sticks. If they have wings, these fold up closely, and are concealed under wing-covers of the same stick-like appearance; while the head and legs are so shaped and jointed as either to fit closely on to the stick-like body, or to appear like branched twigs. These creatures hang about shrubs in the forests, and can seldom be distinguished from small twigs and branches which have fallen from the trees overhead. They remain quite motionless during the day, and feed at night, and they hang anyhow across the foliage, holding on by two or three of their legs only, while the others are closely fitted to the body, and they thus give themselves that unsymmetrical appearance which belongs to accidentally-broken twigs. A few of the species are still further protected by curious green, leafy excrescences all over the body, so as to look exactly like a piece of dead twig overgrown with a delicate moss. Such a one was brought to the present writer in Borneo by a Dyak, who assured him that moss had grown over the insect while alive, and it was only by very close examination that it could be discovered that the supposed moss was really part of the integument of

the insect.

Even among butterflies, whose gay colours seem only adapted to render them conspicuous, there are equally wonderful examples of protective marking. It was first pointed out by Mr. T. W. Wood (to whose skillful pencil we are indebted for the illustrations to this paper) that our beautiful little Orange-tip butterfly (*Anthocharis cardamines*, Fig. 4), although so conspicuous when on the wing, is perfectly concealed when resting in the evening in its favourite position among the flower-heads of the wood parsley (*Anthriscus sylvestris*). Its under surface is beautifully mottled with white and green, which strikingly assimilate with the white and green flower-heads of this plant. Much more wonderful, however, and perhaps the most wonderful of all imitative insects, is the leaf-butterfly of India (*Kallima inachis*, Fig. 5). This is a rather large and handsome butterfly, of a deep bluish colour, with a broad orange band across the wings. It is thus sufficiently conspicuous; but it flies very quickly, and in a zigzag manner, so as to be caught with great difficulty. It is when at rest that it requires protection, and this it obtains

by its colour and markings on the under surface, and by its peculiar habits. The upper wings have an acute lengthened apex, which is exactly the shape of the tip of the leaf of many tropical trees and shrubs; while the hind wings are produced into a short narrow tail, which well represents the stalk of a leaf. Between these points runs a dark curved line, representing the mid-rib, and from this radiate a few oblique markings for the veins of the leaf. The colour of the under side of the wings closely imitates that of dead leaves, but it varies almost infinitely through shades of bright yellow, reddish, ochre, brown, and ashy, just as leaves vary in their different stages of drying and decay. Even more remarkable is the manner in which the diseases and decay of leaves are represented by powdered dots and blotches, often gathered into little groups, so as to imitate in a most marvellous way the various fungi which attack decaying leaves. But to render the disguise effective, it is necessary that the insect should assume the position of a leaf, and this it does most perfectly. It always settles on an upright twig or branch, holding on by its fore legs, while its body (concealed between the lower

margins of the wings) rests against the stem which the extremity of the tail, representing the stalk, just touches. The head and antennæ are concealed between the front margins of the wings, and thus nothing is seen at a little distance but what appears to be a dead leaf still attached to the branch. Yet further, the creature seems to have an instinct which leads it to prefer to rest among dead or decaying leaves, which are often very persistent on bushes in the tropical forests; and this combination of form, colour, marking, habit, and instinct, produces a degree of concealment which is perfectly startling. You see this gay butterfly careering along a forest path, and suddenly rest upon a shrub not three yards from you. Approaching carefully, you look for it in vain, and you may often have to touch the branches before it will dart out from under your very eyes. Again you follow it, and mark the very branch on which it has seemed to rest; but in vain you creep forward, and scan minutely every twig and leaf. You see nothing but foliage--some green, some brown and decaying--till the insect again starts forth, and you find that you have been actually gazing upon it without being able to see any difference

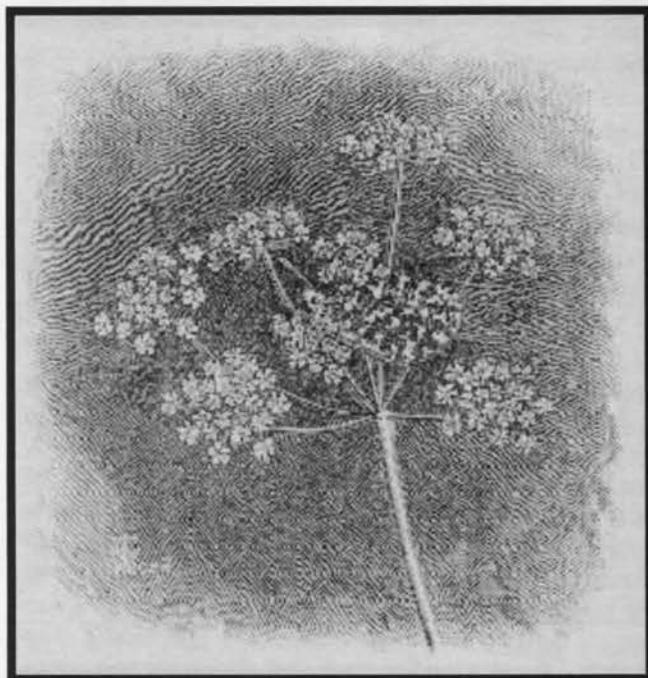


Fig. 4. The Orange-tip Butterfly.



Fig. 5. Leaf Butterfly of India.

between it and the surrounding leaves. After repeated experiences of this kind, and knowing exactly what to look for, you are able sometimes to detect it in repose, and are then more than ever amazed at the completeness of the deception, and at the same time profoundly impressed with the protection that must be afforded by this wonderful disguise--a protection whose effect is seen in the wide range and extreme abundance of the species.

In this case, and in that of the moss-covered stick-insect, we see the extreme perfection of imitative colouring; and we can only understand how this has been produced, by always keeping in mind the very much more numerous cases of slight or partial protection by colour or marking. We can only now briefly indicate some of the steps by which such protection is brought about.

None of the characters of animals are more variable than their colours, though this may appear doubtful when we look at the constant tints and markings of so many animals in a state of nature. There is, however, good reason to believe that even, in cases, these variations are constantly occurring, but, owing to the fact that the tint of each animal is useful to the species, all important deviations from it soon die out. Certain it is that almost every domesticated animal varies in colour, and these varieties, not being hurtful as in a state of nature, are increased and multiplied

without end. Now, if we suppose an animal to suffer from being too conspicuous, any variation of colour or marking tending to make it less conspicuous will give it a better chance of life; and as offspring tend to be like their parents, these less conspicuous varieties will often leave successors similarly endowed; but these again varying, some among them will be still more protected; and thus the protective tints will tend to become more and more perfect in each succeeding generation, till their enemies, finding the pursuit too difficult, will confine their attention chiefly to other species. Then there will be no more change till some new enemy appears, when a further advance may take place till the protection becomes sufficiently perfect to place our supposed animal in a slightly better position than its neighbours.

It has been a difficulty to many persons to understand how such variations could explain the curious cases of the Alpine hare, the ptarmigan, and many other animals which become white in winter only, when the ground is covered with snow and that colour serves as a protection. It has, however, been observed, that a slight seasonal change takes place in many animals. Thus, in Siberia, the wolf, the horse, the cow, the roe, elk, reindeer, and two kinds of antelope, all become paler in colour during winter. Now, if either of these species migrated northward, till it came to inhabit a

country where the winter snow remained on the ground for half the year, varieties in which the seasonal change was more and more pronounced would have an advantage, and thus, in the course of many generations, an animal might be produced which changed colour as completely as do the arctic fox or the ptarmigan.

We must now conclude this very brief outline of one of the most curious chapters in natural history. We have shown how varied and how widespread are protective colours among animals; and, if we add to these the cases in which conspicuous colours are useful, sometimes to warn enemies from such as are distasteful or are possessed of dangerous weapons, at other times to aid wandering species to recognise their companions or to find their mates, we shall become satisfied that we have a clue to much of the varied coloration and singular markings throughout the animal kingdom, which at first sight seem to have no purpose but variety and beauty.

Note Appearing in the Original Work: 'For a full account of these interesting experiments, see "Contributions to the Theory of Natural Selection," 2nd Ed., p. 117.

[The Editor and membership of the Southern Lepidopterists' News thank Dr. Charles H. Smith (University Libraries, Western Kentucky University, Bowling Green, KY 42101; E-mail: charles.smith@wku.edu) for allowing us to use his electronic reproduction of A.R. Wallace's writings which are on his website: <http://www.wku.edu/~smithch/wallace/BIOG.htm>]

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

David Rupe reports: The following species were observed on May 24, 2005, at Bell Slough WMA, Faulkner County, AR: *Calephelis borealis*, 1 male; *Endoia anhedon*, several individuals; *Desmia funeralis*, several.

David Rupe sent in a second report as follows: June 29, 2005, Blue Mountain Lake, Yell County, AR: *Synanthedon rileyana* (**Sesiidae**); July 2, 2005, Nola, Scott County, AR: *Automeris io* (**Saturniidae**); July 4, 2005, Nola, Scott County, AR: *Atlides halesus* (**Lycaenidae**).

Florida: Robert Beiriger, 16356 Trafalgar Drive, East, Loxahatchee, FL 33470, E-mail: bostrichid@mail.ifas.ufl.edu

Robert reports the following: So far in 2005 it has been mixed year for weather. We have had several weeks of dry weather followed by a week or so with heavy rain and then more dry weather. May was very wet with our first tropical storm dumping quite a bit of rain on us, but did not hit us. Even with the heavy rainfall collecting has not been the best.

Robert Beiriger was at Archbold Biological Station on May 21, 2005, and saw *Satyrium calanus*, *Eurema daira*, *Fixsenia favonius*, and *Calycopis cecrops*.

The following records are all from Sarasota County, Florida, and were sent to me by Thomas Williams. *Erimyia obscura*, one male at light, November 13, 2004. *Automeris io*, one male at lights in downtown Sarasota, September 28, 2004 and October 18, 2004.

Leptotes cassius appeared in large numbers from May 6 to late December 2004. Mostly seen around its host plant, Plumbago. So far only one seen in 2005 on May 22. Females of *Asbolis capucinus*, were seen at Mexican petunia on September 12, 2004, on Vinca, September 13, 2004 and at Star Jasmine on November 7, 2005. One male *Parrhasius m-album* was found nectaring on Brazilian pepper and several other seen around same area, April 24, 2004. March 7 and 28, April 9 and 18, October 23, and November 12, 2004, specimens of *Polygonia interrogationis* were seen flying around wooded areas.

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

Records are from James Adams (JA or no notation), Kathy Parker-Adams (KPA), Patrick Adams (PA), Lance Durden, Jeff Slotten (JS) and Irving Finkelstein (IF). Most records presented here represent new or interesting records (range extensions, unusual dates, uncommon species, county records, etc.) or records for newly investigated areas. Known County and State records are indicated. All dates listed below are 2005 unless otherwise specified. Uncommon or unusual locality records marked with "*" in some cases.

Blue Ridge, Fannin Co., April 10, 2005:

NOCTUIDAE: *Feralia major* (LATEST record for anywhere in Georgia), *Acrionicta noctivaga*.

Cooper's Creek Wildlife Management Area, Fannin/Union Cos., April 9-10, 2005 (JA, KPA, PA, and IF):

PAPILIONIDAE: *Pterourus glaucus*. **PIERIDAE:** *Anthocharis midea*, *Pieris virginiensis*, *Phoebis sennae* (EARLY). **LYCAENIDAE:** *Incisalia augustinus*. **LASIOCAMPIDAE:** *Phyllodesma americana*. **SPHINGIDAE:** *Deidamia inscripta* (abundant!). **NOCTUIDAE:** *Zale aeruginosa*, *Z. minerea*, *Z. lunifera*, *Z. duplicata*, *Phoberia atomaris*, *Baileya dormitans*, *Crocigrapha normani*, *Achatia distincta*, *Egira alternans*, *Orthosia rubescens*, *O. hibisci*, *O. revicta* (1), *Copivaleria grotei*, *Xystocheilus rufago*, *Cerastis tenebrifera*. **NOTODONTIDAE:** *Symmerista albifrons*. **THYATIRIDAE:** *Euthyatira pudens*. **GEOMETRIDAE:** *Phigalia titea*, *Ectropis crepuscularia*, *Cleora sublunaria*, *Aethalura intertexta*, *Pero honestaria*, *Selenia kentaria*, *Probole nyssaria*, *Metarranthis sp. nov.*, *Besma quercivoraria*, *Eutrapela clemataria*, *Hydriomena pluviala*, *Anticlea vasiliata*, *Eupithecia sp.*, *Cladara atrolineata*, *C. anguilineata*.

Brawley Mountain area, 10 miles SSE of Blue Ridge, Fannin Co., June 22, 2005:

HESPERIIDAE: *Autochthon cellus*. **NYMPHALIDAE:** *Speyeria diana* (males common, apparently a good year for this species), *Polygonia faunus smithii*, *Nymphalis antiopa*.

Gates Chapel Road, 8 miles NW of Ellijay, Gilmer Co. (IF):

May 25-26:

ARCTIIDAE: *Spilosoma latipennis**. **NOCTUIDAE:** *Quandara brauneata* (common). **GEOMETRIDAE:** *Macaria pinistrobata*, *Eufidonia convergaria*, *Anagoga occiduaria* (LATE). **ADELIDAE:** *Adela caeruleella*. **SESIIDAE:** *Parathrene simulans* (common!).

June 16-18:

NOCTUIDAE: *Catocala clintoni*, *Achatodes zaeae*, *Oligia crytora*, *Neoligia semicana*. **GEOMETRIDAE:** *Lytrosis sinuosa* (4), *Euchlaena muzaria* (very yellow), *Cepphis armataria*. **SESIIDAE:** *Parathrene simulans* (at light trap!), *Synanthedon kathyae*.

Calhoun, Gordon Co. (my house):

NOCTUIDAE: *Achatodes zaeae*, June 20, 2005.

Calhoun, Gordon Co., N end of Tate Bend road, along Oostanaula River, cane habitat, June 4, 2005:

GEOMETRIDAE: *Eusarca packardaria* (records from this site now for every month from June through October), *Idaea celtima* (COUNTY).

April 16-17 (IF and JA):

Crockford-Pigeon Mtn. WMA, Walker Co.:

PIERIDAE: *Anthocharis midea*. **LYCAENIDAE:** *Atlides halesus*, *Parhassius* —*album*, *Incisalia henrici*.

Taylor's Ridge Trail, 6 miles west of Villanow, Walker Co.:

SATURNIIDAE: *Actias luna*, *Dryocampa rubicunda*. **SPHINGIDAE:** *Laothoe juglandis*. **NOCTUIDAE:** *Hypsoropha monilis*, *Ptichodis herbarum*, *Zale minerea*, *Z. unilineata*, *Z. confusa*, *Z. obliqua*, *Colocasia propinquilinea*, *Acrionicta interrupta*, *A. vinnula*, *A. hasta*, *Homorthodes lindseyi*, *Anorthodes tarda*, *Phosphila miselioides*, *Balsa labecula*. **GEOMETRIDAE:** *Orthofidonia flavivenata*, *Euchlaena* sp. (*muzaria*?), *Metarranthis obfirmaria*, *M. hamaria*, *Hydriomena transfigurata* (?), *Rheumaptera prunivora*. **PYRALIDAE:** *Evergestis unimacula*.

Rocky Face Ridgeline, just SW of Dalton, Whitfield Co., April 20, 2005 (JA):

NOCTUIDAE: *Hemeroplanis scopulepes* (brown), *Ptichodis* near *herbarum*, *Ulolonche modesta*.

Cave Spring, Floyd Co., May 6, 2005 (JA and IF):

SATURNIIDAE: *Callosamia angulifera*, *Dryocampa rubicunda*. **ARCTIIDAE:** *Spilosoma virginica*. **NOCTUIDAE:** *Colobochoyla interpuncta*, *Lacinipolia renigera*, *L. explicata*. **THYATIRIDAE:** *Pseudothyatira cymatophoroides*.

June 19-20:

SPHINGIDAE: *Ceratonia catalpae*. **ARCTIIDAE:** *Leucanopsis longa*.

Coosa Valley Prairie area, WNW of Cave Spring, Floyd Co., May 6-7, 2005 (IF and JA):

Butterflies: **NYMPHALIDAE:** *Limenitis archippus*, *L. arthemis astyanax*. **LYCAENIDAE:** *Incisalia niphon*.

Wooded habitat along north side of Jefferson Road, approx. five miles WNW of Cave Spring:

SATURNIIDAE: *Actias luna*. **SPHINGIDAE:** *Ceratonia undulosa*, *Paonias excaecatus*, *Deidamia inscripta*. **LYMANTRIIDAE:** *Dasychira manto*. **ARCTIIDAE:** *Cisthene plumbea*, *Clemensia albata*, *Holomelina opella*, *Spilosoma congrua*, *Apantesis nais*. **NOCTUIDAE:** *Idia aemula*, *Zanclognatha lituralis*, *Z. cruralis*, *Z. ochreipennis*, *Chytolita petrealis*, *Bleptina caradrinalis*, *B. inferior*, *Renia flavipunctalis*, *Phalaenophana pyramusalis*, *Tetanolita mynesalis*, *Lascoria ambigualis*, *Dyspyralis illocata*, *Hypenodes fractilinea*, *Bomolocha abalienalis*, *Plathypena scabra*, *Hypsopropha monilis*, *H. hormos*, *Phyprosopus callitrichoides*, *Plusiodonta compressipalpis*, *Sparganothus sexpunctata*, *Pangrapta decoralis*, *Ledaea perditalis*, *Lesmone detrahens*, *Argyrostromis anilis*, *Mocis texana*, *Parallela bistriaria*, *Dysgonia smithii*, *Zale galbanata*, *Z. lunata*, *Z. minerea*, *Z. obliqua*, *Z. helata*, *Z. horrida*, *Metalectra quadrisignata*, *M. tantillus*, *Meganola minuscula*, *Baileya ophthalmica*, *Paectes oculatrix*, *Acrionicta lobeliae*, *A. hasta*, *A. impleta*, *A. interrupta*, *A. modica*, *A. ovata*, *A. vinnula*, *Panthea* near *furcilla*, *Thioptera nigrofimbria*, *Hyperstrotia pervertens*, *Iodopepla u-album*, *Balsa malana*, *B. tristrigella*, *Elaphria chalcedonia*, *Orthodes crenulata*, *Anorthodes tarda*, *Pseudaletia unipuncta*, *Hormothodes lindseyi*, *Condica vecors*, *Ogdoconta cinereola*, *Euagrotis lubricans*, *Xestia dolosa*. **NOTODONTIDAE:** *Nadata gibbosa*, *Lochmaeus manteo*, *L. bilineata*, *Nerice bidentata*, *Heterocampa biundata*, *H. guttivitta*, *Schizura* near *concinna*. **DREPANIDAE:** *Eudeilina*

herminiata*. **EPIPLEMIDAE**: *Calledapteryx dryopterata*. **GEOMETRIDAE**: *Mellilla xanthometata*, *Trigrammia quadrinotaria*, *Exelis pyloraria*, *Glena plumosaria*, *Glena cribrataria*, *Iridopsis vellivolata*, *Anavitrinella pampinaria*, *Ectropis crepuscularia*, *Melanolophia signataria*, *Hypagyrtis unipunctata*, *H. esther*, *Lomographa vestaliata*, *Cabera quadrifasciaria* (COUNTY, second known location in STATE), *Euchlaena obtusaria*, *E. amoenaria*, *E. madusaria*, *Metarranthis homuraria*, *M. indeclinata*, *Probole amicaria*, *Besma quercivoraria*, *Lambdina pellucidaria*, *Eutrapela clemataria*, *Nemoria lixaria*, *N. bistrisaria*, *Dichorda iridaria*, *Anticlea multiferata*, *Rheumaptera prunivorata*, *Scopula limboundata*, *Costaconvexa centrostrigaria*, *Eupithecia miserulata*, *Eupithecia* sp. **MEGALOPYGIDAE**: *Megalopyge crispata*. **PYRALIDAE**: *Saucrobotys futilalis*, *Desmia funeralis*, *Palpita magniferalis*, *Achyra rantalis*, *Perispasta caeculalis*, *Dioryctria clarioralis*. **OECOPHORIDAE**: *Antaeotricha schlaegeri*.

Grand Prairie site, approx. 6 miles WNW of Cave Spring:

SATURNIIDAE: *Actias luna*, *Antheraea polyphemus*. **APATELODIDAE**: *Olceclostera angelica*. **ARCTIIDAE**: *Crambidia lithosioides*, *Clemensia albata*, *Holomelina opella*, *Pagara simplex*, *Cyenia tenera*, *Apantesis nais*. **NOCTUIDAE**: *Renia flavipunctalis*, *Bleptina caradrinalis*, *Palthis angulalis*, *Caenurgina chloropha*, *Orthodes crenulata*, *Homorthodes lindseyi*, *Galgula partita*. **NOTODONTIDAE**: *Nadata gibbosa*. **GEOMETRIDAE**: *Anavitrinella pampinaria*, *Iridopsis vellivolata*, *Ectropis crepuscularia*, *Lambdina pellucidaria*, *Costaconvexa centrostrigaria*. **PYRALIDAE**: *Pyrausta homonymalis*, *Desmia funeralis*, *Colomychus talis*, *Achyra rantalis*, *Crambus agitatellus*. **ETHMIIDAE**: *Ethmia trifurcella*. **SESIIDAE**: *Paranthrene asilipennis* (COUNTY, uncommon in STATE), *Synanthedon pictipes*.

June 19-20, 2005 (IF and JA):

Butterflies: **PAPILIONIDAE**: *Battus philenor*. **PIERIDAE**: *Colias eurytheme*, *Eurema nicippe*. **NYMPHALIDAE**: *Euptoeita claudia*, *Limenitis arthemis astyanax*, *L. archippus*, *Vanessa virginesis*, *Danaus plexippus*.

Open woods along Jefferson road:

SPHINGIDAE: *Lapara coniferarum*. **SATURNIIDAE**: *Anisota stigma*. **APATELODIDAE**: *Apatelodes torrefacta*. **ARCTIIDAE**: *Hypoprepia fucosa*, *Cisthene plumbea*, *Crambidia pallida*, *C. lithosioides*, *Holomelina opella*, *Haploa chymene*, *Hyphantria cunea*, *Cisseps fulvicollis*. **LYMANTRIIDAE**: *Dasychira basiflava*. **NOCTUIDAE**: *Idia americalis*, *I. rotundalis*, *I. diminuendis*, *Zanclognatha lituralis*, *Z. martha*, *Tetanolita mynesalis*, *T. floridana*, *Palthis angulalis*, *Renia salusalis*, *Renia fraternalis*, *Colobochyla interpuncta*, *Macrochilo hypocritalis*, *Lascoria ambigualis*, *Hemeroplanis scopulepes*, *Ledaea perditalis*, *Pangrapta decoralis*, *Arugisa latiorella*, *Plusiodonta compressipalpis*, *Ptichodis herbarum*, *Argyrostromis anilis*, *Caenurgia chloropha*, *Caenurgina erectea*, *Zale lunata*, *Metalectra richardsi*, *Catocala alabamiae**, *Nola cereella*, *Thioptera nigrofimbria*, *Hyperstrotia pervertens*, *H. secta*, *H. nana*, *Eumicremma minima*, *Homophoberia apicosa*, *Spragueia leo*, *Acontia aprica*, *Tarachidia erastrisoides*, *Polygrammate hebraeicum*, *Chytonix palliatricula*, *Azenia obtusa*. **NOTODONTIDAE**: *Nadata gibbosa*, *Lochmaeus manteo*, *Schizura ipomoeae*. **GEOMETRIDAE**: *Anavitrinella pampinaria*, *Ectropis crepuscularia*, *Hypagyrtis esther*, *Tornos scolopacinaris*, *Erastris cruentaria*, *Nepytia new* sp., *Prochoerodes transversata*, *Eutrapela clemataria*, *Antepione thisoaria*, *Eusarca confusaria*, *Nemoria bistrisaria*, *Scopula limboundata*, *Idaea demissaria*, *Costaconvexa centrostrigaria*, *Eupithecia miserulata*, *Eupithecia* sp. **PYRALIDAE**: *Desmia funeralis*, *Diasemiodes janassialis*, *Nomophila nearctica*, *Epipaschia zelleri*, *E. superatalis*, *Galasa nigrinodis*, *Crambus agitatellus*, *Condylolomia participalis*, *Peoria approximella*. **LIMACODIDAE**: *Isochaetes beutenmulleri*, *Lithacodes fasciola*, New species. **MEGALOPYGIDAE**: *Megalopyge crispata*. **SESIIDAE**: *Paranthrene simulans*, *Synanthedon rubrofascia*. **TINEIDAE**: *Fernaldia anatomella*.

Grand Prairie site, approx. 6 miles WNW of Cave Spring:

SPHINGIDAE: *Lapara coniferarum*. **LASIOCAMPIDAE**: *Tolyte notialis*. **ARCTIIDAE**: *Crambidia pallida*, *Pagara simplex*, *Cisseps fulvicollis*. **NOCTUIDAE**: *Idia americalis*, *I. rotundalis*, *I. diminuendis*, *Zanclognatha martha*, *Tetanolita floridana*, *T. mynesalis*, *Palthis angulalis*, *Hypenodes fractillinea*, *Lascoria ambigualis*, *Spargaloma sexpunctata*, *Caenurgia chloropha*, *Argyrostromis anilis*, *Thioptera nigrofimbria*, *Spragueia leo*, *Homophoberia apicosa*, *Galgula partita*. **NOTODONTIDAE**: *Datana drexelli*, *Nadata gibbosa*, *Lochmaeus bilineata*. **GEOMETRIDAE**: *Anavitrinella pampinaria*, *Exelis pyloraria*, *Tornos scolopacinaris*, *Nepytia* sp., *Antepione thisoaria*, *Eusarca confusaria*, *Idaea demissaria*, *Orthonama obstipata*, *Costaconvexa centrostrigaria*. **LIMACODIDAE**: *Lithacodes fasciola*, New sp. **MEGALOPYGIDAE**: *Megalopyge crispata*. **PYRALIDAE**: *Loxostege cereralis**, *Desmia funeralis*, *Achyra rantalis*, *Diasemiodes janassialis*, *Epipaschia zelleri*, *E. superatalis*, *Herculia olinalis*, *Nomophila nearctica*, *Pyrausta* (4 species), *Perispasta caeculalis*, *Dioryctria clarioralis*, *Crambus agitatellus*, *Peoria approximella*, and several others. **TORTRICIDAE**: The tortricids are incredibly diverse here, including several *Eucosma* sp., *Sparganothis bistrisaria*, *Choristoneura fumiferana*. **GELECHIIDAE**: *Trichotaphe*

flavocostella. **SESSIIDAE**: *Synanthedon rubrofascia*.

Statesboro, Bulloch Co., March 2005 (Lance Durden):

CRAMBIDAE: *Crambus sastrapellus*.

St. Catherine's Island, Liberty Co., Aug. 17, 1994 (Lance Durden):

NOCTUIDAE: *Physula albipunctella* (STATE).

A trip to south Georgia in June was quite productive, and included many species of both pyralids and tortricids that have yet to be identified.

Laurens Co. Rest Area, mile 43, June 24, 2005:

NOCTUIDAE: *Spodoptera latifascia**, (COUNTY).

Oohoopee Dunes, Tract 2, 7 miles directly W of Swainsboro, Emanuel Co., June 24-25, 2005 (JA, IF, and JS):

SATURNIIDAE: *Automeris io*, *Actias luna*. **SPHINGIDAE**: *Ceratomia catalpae*, *Lapara coniferarum*, *Paonias myops*, *P. excaecatus*, *Darapsa myron*. **LYMANTRIIDAE**: *Orgyia definita*. **NOTODONTIDAE**: *Nadata gibbosa*, *Heterocampa biundata*. **ARCTIDAE**: *Cisthene subjecta*, *Crambidia pallida*, *Holomelina aurantiaca*, *Apantesis nais*. **NOCTUIDAE**: *Idia americalis*, *I. aemula*, *I. rotundalis*, *Zanclognatha theralis*, *Palthis angulalis*, *Hypsoropha hormos*, *Bomolocha baltimoralis*, *Hemeroplanis sp.*, *Pangrapta decoralis*, *Gabara subniveosella*, *Caenurgia chloropha*, *Panopoda rufimargo*, *Argyrostromis carolina*, *Metalectra tantillus*, *Catocala ilia*, *C. gracilis*, *C. similis*, *C. alabamiae*, *C. amica* (including *nerissa*), *C. micronympha*, *Hyperstrotia flaviguttata*, *H. nana*, *Acronicta brumosa*, *A. hasta*, *A. ovata*, *Emarginea percara*, *Spodoptera ornithogalli*, *Condica videns*, *Euagrotis lubricans*. **GEOMETRIDAE**: *Eumacaria laetiferrugata*, *Macaria distribuaria*, *Digrammia eremiata*, *Narraga georgiana* (abundant, indicates strong June brood), *Anavitrinella pampinaria*, *Hypomecis umbrosaria*, *Epimecis hortaria*, *Lomographa vestaliata*, *Plagodis fervidaria*, *Nemoria lixaria*, *N. bifilata*, *Idaea desmissaria*, *Cyclophora packardi*. **PYRALIDAE**: *Desmia funeralis*, *Dioryctria disclusa*, *Herculia olinalis*, *Pyrausta laticlavata*, *Epipaschia zelleri*, *Lepidomys irrenosa*, *Condylomia participalis*. **LIMACODIDAE**: *Natada nasoni*, *Apoda rectilinea*. **MEGALOPYGIDAE**: *Megalopyge crispata*, *M. opercularis*. **TORTRICIDAE**: *Eucosma robinsonana*. **OECOPHORIDAE**: *Antaeotricha schlaegeri*. **URODIDAE**: *Urodus parvula*.

Oohoopee Dunes, Tract 3 (Woods), 8 miles WSW of Swainsboro, Emanuel Co., June 24-25, 2005 (JA, IF, and JS):

SATURNIIDAE: *Automeris io*, *Dryocampa rubicunda*. **LASIOCAMPIDAE**: *Artace cribraria*. **SPHINGIDAE**: *Darapsa myron*. **LYMANTRIIDAE**: *Dasychira obliquata*, *Orgyia definita*. **NOTODONTIDAE**: *Datana ministra*, *D. integerrima*, *Nadata gibbosa*, *Heterocampa obliqua*, *Lochmaeus bilineata*. **ARCTIDAE**: *Crambidia pallida*, *Holomelina immaculata*. **NOCTUIDAE**: *Idia americalis*, *I. aemula*, *I. rotundalis*, *Bleptina caradrinalis*, *B. inferior*, *Renia dicoloralis*, *Palthis angulalis*, *Colobochyla interpunctata*, *Phytometra rhodarialis*, *Ledaea perditalis*, *Pangrapta decoralis*, *Arugisa latiorella*, *Cutina albopunctella*, *C. arcuata*, *Panopoda rufimargo*, *Argyrostromis carolina*, *A. erasa*, *A. deleta*, *Ptichodis herbarum*, *Drasteria grandirena*, *Dysgonia similis*, *Catocala preclara*, *C. amica*, *Meganola minuscula*, *Nola near pustulata* (small), *Paectes abrosteloides*, *Baileya levitans*, *Hyperstrotia villificans*, *H. flaviguttata*, *H. nana*, *Spragueia leo*, *Acronicta afflicta*, *A. radcliffei*, *A. ovata*, *Chytonix palliatricula*, *Callopietria cordata*, *Amphipyra pyramidoides*. **GEOMETRIDAE**: *Macaria bicolorata*, *Anavitrinella pampinaria*, *Hypomecis umbrosaria*, *Glena cribrataria*, *Glenoides texanaria*, *Epimecis hortaria*, *Melanolophia signataria*, *Lomographa vestaliata*, *Thysanopyga intractata*, *Xanthotype utricaria*, *Pero morrisonaria*, *Euchlaena sp. near tigrinaria*, *Besma quercivoraria*, *Prochoerodes transversata*, *Eutrapela clemataria*, *Nemoria lixaria*, *Synchlora aerata*, *Synchlora xysteraria* (STATE), *Idaea sp.*, *Cyclophora sp.*, *Eulithis diversilineata*, *Costaconvexa centrostrigaria*. **PYRALIDAE**: *Desmia maculalis*, *Palpita maniferalis*, *Condylomia participalis*, *Melitara prodenialis*. **LIMACODIDAE**: *Apoda y-inversum*, *Lithacodes fasciola*. **MEGALOPYGIDAE**: *Megalopyge opercularis*.

Oohoopee Dunes, Tract 3 (Dunes), 8 miles WSW of Swainsboro, Emanuel Co., June 24-25, 2005 (JA, IF, and JS):

SPHINGIDAE: *Darapsa myron*. **NOTODONTIDAE**: *Datana integerrima*, *Nadata gibbosa*, *Heterocampa umbrata*, *Lochmaeus manteo*. **ARCTIDAE**: *Cisthene striata*, *Holomelina aurantiaca*, *H. laeta*. **NOCTUIDAE**: *Idia americalis*, *I. aemula*, *I. rotundalis*, *Zanclognatha theralis*, *Ledaea perditalis*, *Pangrapta decoralis*, *Metalectra discalis*, *Argyrostromis carolina*, *Parallelia bistrariis*, *Catocala similis*, *C. gracilis*, *C. amica* (including *nerissa*), *Marathyssa inficita*, *Thioptera nigrofimbria*, *Hyperstrotia nana*, *Acronicta brumosa*, *A. hasta*, *A. vinnula*, *Iodopepla u-album*, *Orthodes crenulata*, *Callopietria mollissima*. **GEOMETRIDAE**: *Macaria transitaria*, *M. distribuaria*,

Narraga georgiana, *Anavitrinella pampinaria*, *Hypomecis umbrosaria*, *Hypagyrtis unipunctata*, *H. esther*, *Lomographa vestaliata*, *Euchlaena* sp. near *tigrinaria*, *Plagodis fervidaria*, *Prochoerodes transversata*, *Nematocampa baggetaria**, *Nemoria lixaria*, *Idaea* sp. **PYRALIDAE**: *Desmia funeralis*, *Condylomia participalis*. **LIMACODIDAE**: *Monoleuca semifascia*. **MEGALOPYGIDAE**: *Megalopyge opercularis*. **PRODOXIDAE**: *Tegeticula yuccasella*.

Ohoopce Dunes, Tract 4, 9 miles SW of Swainsboro (just E of Covena), Emanuel Co., June 24-25, 2005 (JA, IF, and JS):

SATURNIIDAE: *Actias luna*, *Callosamia angulifera*. **APATELODIDAE**: *Apatelodes torrefacta*, *Olceclostera angelica*. **SPHINGIDAE**: *Manduca sexta*, *Lapara coniferarum*, *Paonias excaecatus*, *Darapsa pholus*, *D. myron*. **LYMANTRIIDAE**: *Dasychira atrivenosa**, *Orgyia definita*. **NOTODONTIDAE**: *Datana perspicua*, *D. integerrima*, *Nadata gibbosa*, *Symmerista albifrons*, *Heterocampa umbrata*, *Hyparpax aurora*. **ARCTIDAE**: *Cisthene subjecta*, *Crambidia pallida*, *Holomelina aurantiaca*, *H. immaculata*, *H. laeta*, *Hyphantria cunea*, *Spilosoma virginica*, *S. congrua*, *Apantesis nais*, *Cisseps fulvicollis*. **NOCTUIDAE**: *Idia americalis*, *I. aemula*, *I. rotundalis*, *Bleptina inferior*, *Zanclognatha lituralis*, *Z. theralis*, *Renia fraternalis*, *Tetanolita*, *mynesalis*, *T. floridana*, *Palthis angulalis*, *Lomonaltes eductalis**, *Hypsoropha hormos*, *Phyprosopus callitrichoides*, *Phytometra rhodarialis*, *Hemeroplanis* sp., *Pangrapta decoralis*, *Arugisa latiorella*, *Gabara subniviosella*, *Parallelia bistriaris*, *Caenurgia chloropha*, *Panopoda rufimargo*, *Argyrostromis anilis*, *A. carolina*, *A. erasa*, *A. sylvanum*, *A. deleta*, *Ptichodis herbarum*, *P. vinculum*, *Catocala ultronia*, *C. ilia*, *C. andromedae*, *C. similis*, *C. alabamiae*, *C. amica*, *Ctenoplusia oxygramma*, *Meganola minuscula*, *Paectes pygmaea*, *P. oculatrix*, *Baileya levitans*, *B. doubledayi*, *Hyperstrotia pervertens*, *H. villificans*, *H. flaviguttata*, *H. nana*, *Spragueia leo*, *Tarachidia erastrionides*, *T. semiflava*, *Homophoberia apicosa*, *Cerma cerintha*, *Acronicta tritona*, *A. brumosa*, *A. hasta*, *A. inclara*, *A. ovata*, *A. exilis*, *Harrismemna trisignata*, *Polygrammate hebraeicum*, *Callopietria mollissima*, *C. granitosa* (COUNTY, very uncommon in STATE), *Emarginea percara*, *Amphipyra pyramidoides*, *Spodoptera ornithogalli*, *Leucania extincta*, *L. multilinea*, *L. incognita*, *Elaphria chalcedona*, *E. versicolor*, *E. excessa*, *Condica vecors*, *C. videns*, *Euagrotis lubricans*, *Agrotis venerabilis*, *Helicoverpa zea*. **GEOMETRIDAE**: *Eumacaria laetiferrugata*, *Macaria bicolorata*, *M. bisignata*, *M. transitaria*, *Digrammia continuata*, *D. eremiata*, *D. gnophosaria*, *Anavitrinella pampinaria*, *Hypomecis umbrosaria*, *Iridopsis defectaria*, *I. larvaria*, *Glena cribrataria*, *Glena plumosaria* (COUNTY), *Tornos scolopacinarius*, *Lomographa vestaliata*, *Euchlaena madusaria*, *Euchlaena* sp. near *tigrinaria*, *Besma quercivoraria*, *Plagodis fervidaria*, *Probole* sp., *Nemoria lixaria*, *Idaea ossularia*, *Scopula lautaria* (COUNTY, second known in STATE), *Lobocleta peralbata*, *Eulithis diversilineata*, *Pleuroprucha insulsaria*. **PYRALIDAE**: *Dioryctria merkei*, *D. clarioralis*, *Conchylodes ovulalis*, *Lepidomys irrenosa*, *Pyrausta laticlavia*, *Munroessa icciusalis*, *Condylomia participalis*, *Melitara prodenialis*. **LIMACODIDAE**: *Isa textula*. **MEGALOPYGIDAE**: *Megalopyge crispata*, *M. opercularis*. **COSSIDAE**: *Cossula magnifica*, *Givira anna*. **TORTRICIDAE**: *Eucosma robinsonana*. **OECOPHORIDAE**: *Antaeotricha schlaegeri*. **URODIDAE**: *Urodus parvula*. **GELECHIIDAE**: *Trichotaphe flavocostella*. **COSMOPTERYGIDAE**: *Euclementia bassetella*. **PRODOXIDAE**: *Tegeticula yuccasella*. **SESIIDAE**: *Synanthedon rubrofascia*.

Griffin Ridge WMA, Long Co. (Swampy Woods), 3 miles SW of Ludowici, along the Altamaha, June 25-26, 2005 (JA, JS, and IF):

SATURNIIDAE: *Antheraea polyphemus*. **LYMANTRIIDAE**: *Orgyia definita*. **NOTODONTIDAE**: *Nadata gibbosa*, *Heterocampa astarte*, *Hyparpax aurora*. **ARCTIIDAE**: *Clemensia albata*, *Crambidia pallida*, *Cisthene subjecta*, *Holomelina immaculata*. **NOCTUIDAE**: *Idia americalis*, *I. diminuendis*, *I. forbesi*, *Zanclognatha lituralis*, *Bleptina caradrinalis*, *B. inferior*, *Palthis angulalis*, *Hypsoropha hormos*, *Phyprosopus callitrichoides*, *Pangrapta decoralis*, *Ledaea perditalis*, *Arugisa latiorella*, *Scolecocampa liburna*, *Cutina albopunctata*, *C. arcuata*, *Argyrostromis carolina*, *Metallata absumens*, *Zale declarans*, *Panopoda rufimargo*, *Caenurgia chloropha*, *Metria amella*, *Drasteria grandirena*, *Allotria elonympha*, *Catocala similis*, *C. amica*, *C. micronympha*, *Baileya doubledayi*, *Nola* sp. near *pustulata*, *Meganola minuscula*, *M. phylla*, *Hyperstrotia flaviguttata*, *H. nana*, *Lithacodia bellicula* (COUNTY, very uncommon in STATE), *Acronicta ovata*, *A. vinnula*, *Polygrammate hebraeicum*, *Iodopepla u-album*, *Elaphria versicolor*, *E. chalcedonia*, *E. excessa*, *E. fuscimacula* (COUNTY, uncommon in STATE), *E. agrotina* (?), one unknown noctuid. **GEOMETRIDAE**: *Macaria bicolorata*, *M. transitaria*, *M. distribuaria*, *Glenodes texanaria*, *Anavitrinella pampinaria*, *Protoarmia porcellaria*, *Hypomecis umbrosaria*, *Iridopsis defectaria*, *I. vellivolata*, *Hypagyrtis unipunctata*, *Euchlaena* sp. near *tigrinaria*, *Thysanopyga intractata*, *Prochoerodes transversata*, *Nematocampa resistaria*, *Nemoria lixaria*, *Idaea taturata*, *Idaea* sp.*. **Lobocleta peralbata**, *Eulithis diversilineata*, *Orthonama obstipata*. **PYRALIDAE**: *Carectocultus perstrialis*, *Dioryctria clarioralis*, *D. merkei*, *Desmia funeralis*, *D. maculalis*, *Paraponyx seminealis**. **MEGALOPYGIDAE**: *Megalopyge opercularis*. **LIMACODIDAE**: *Apoda*

rectilinea. **OECOPHORDAE**: *Inga sparsiciliella*. **PTEROPHORIDAE**: 2 species.

Griffin Ridge WMA, Long Co. (Oak/Palmetto Hammock) June 25-26, 2005 (JA, JS, and IF):

LYMANTRIIDAE: *Dasychira obliquata*, *D. manto*. **NOTODONTIDAE**: *Nadata gibbosa*, *Heterocampa obliqua*, *H. astarte*, *Symmerista albifrons*, *Schizura ipomoeae*, *Schizura* sp. **ARCTIIDAE**: *Cisthene subjecta*, *Holomelina laeta*. **NOCTUIDAE**: *Idia americalis*, *I. diminuendis*, *I. rotundalis*, *Bleptina inferior*, *Renia fraternalis*, *Palthis angulalis*, *Hypsoropha hormos*, *Phyprosopus callitrichoides*, *Pangrapta decoralis*, *Arugisa latiorella*, *Cutina albopunctata*, *C. arcuata*, *Argyrostromis carolina*, *A. deleta*, *Mocis marcida*, *Panopoda rufimargo*, *P. repanda*, *Caenurgia chloropha*, *Metria amella*, *Metalectra tantillus*, *Melipotis jucunda*, *Allotria elonympha*, *Catocala louiseae*, *C. similis*, *C. amica*, *C. micronympha*, *Marathyssa inficita*, *Baileya dormitans*, *Nola* sp. near *pustulata*, *Meganola minuscula*, *M. phylla*, *Oruza albocostaliata*, *Thioptera nigrofimbria*, *Hyperstrotia pervertens*, *H. villificans*, *H. nana*, *Acrionicta afflicta*, *A. brumosa*, *A. inclara*, *A. ovata*, *A. vinnula*, *A. tritona*, *Polygrammate hebraeicum*, *Agriopodes fallax*, *Charadra deridens*, *Chytonix palliatricula*, *Iodopepla u-album*, *Properigea tapeta**, *Elaphria grata*, *E. nucicolora* (COUNTY), *E. chalconia*, *E. excessa*, *E. agrotina* (?), *Orthodes crenulata*, *Spodoptera frugiperda*, *S. dolichos*, *Agrotis malefida*. **EPIPLEMIDAE**: *Calledapteryx dryopterata*. **GEOMETRIDAE**: *Macaria bicolorata*, *M. transitaria*, *M. minorata*, *Glenodes texanaria*, *Anavitrinella pampinaria*, *Ectropis crepuscularia*, *Hypomecis umbrosaria*, *Iridopsis defectaria*, *Hypagyrtis unipunctata*, *H. esther*, *Euchlaena amoenaria*, *Besma quercivoraria*, *Eutrapela clemataria* (including yellow form), *Nematocampa resistaria*, *Nemoria lixaria*, *Cyclophora packardi*, *Eulithis diversilineata*, *Eupithecia miserulata*. **PYRALIDAE**: *Munroessa icciusalis*, *M. gyalis*, *Tallula atrofascialis*, *Condylolomia participalis*, *Diasemioides jannasialis*, *Peoria approximella*. **TORTRICIDAE**: *Choristoneura rosaceana*, *C. argentifascia* (COUNTY, second known location in STATE). **MEGALOPYGIDAE**: *Megalopyge opercularis*. **PSYCHIDAE**: *Oiketeticus abbotti*, *Cryptothelia gloveri*. **OECOPHORDAE**: *Antaeotricha schlageri*, *Inga sparsiciliella*. **SESIIDAE**: *Synanthedon rubrofascia*.

Horse Creek WMA, Telfair County, along Altamaha River, 20 miles S. of Mcrae, June 26-27 (JA and IF):

SATURNIIDAE: *Dryocampa rubicunda*, *Automeris io*, *Actias luna*, *Antheraea polyphemus*. **APATELODIDAE**: *Apatelodes torrefacta*. **LASIOCAMPIDAE**: *Tolyte notialis*, *Artace cribraria*. **SPHINGIDAE**: *Lapara coniferarum*, *Darapsa myron*. **LYMANTRIIDAE**: *Dasychira basiflava*, *D. tephra*, *Orgyia definita*. **NOTODONTIDAE**: *Datana major*, *D. drexeli*, *D. integerrima*, *Nadata gibbosa*, *Symmerista albifrons*, *Heterocampa umbrata*, *H. obliqua*, *H. biundata*, *H. subrotata*, *Peridea angulosa*, *Macrurocampa marthesia*, *Nerice bidentata*, *Schizura* sp. **ARCTIIDAE**: *Cisthene subjecta*, *Hypoprepica miniata*, *Crambidia pallida*, *C. lithosioides*, *Clemensia albata*, *Holomelina immaculata*, *Hyphantria cunea*, *Spilosoma virginica*, *Euerythra phasma* (COUNTY, second location in STATE, 300 miles from other known record in Dade Co.), *Apantesis nais*, *Halysidota tessellaris*. **NOCTUIDAE**: *Idia americalis*, *I. aemula*, *I. rotundalis*, *I. diminuendis*, *I. forbesi*, *Bleptina caradrinalis*, *Chytolita petrealis*, *Tetanolita mynesalis*, *Palthis angulalis*, *P. asopialis*, *Melanomma auricinctaria**, *Colobochyla interpuncta*, *Bomolocha baltimoralis*, *Hypsoropha hormos*, *Phyprosopus callitrichoides*, *Plusiodonta compressipalpis*, *Phytometra rhodarialis*, *P. ernestinana**, *Pangrapta decoralis*, *Arugisa latiorella*, *Cutina aluticolor*, *C. arcuata*, *Lesmone detrahens*, *Argyrostromis anilis*, *A. carolina*, *Ptichodis herbarum*, *Parallelia bistrariis*, *Caenurgia chloropha*, *Celiptera frustulum*, *Panopoda rufimargo*, *P. carneicosta*, *Mocis texana*, *Zale minerea*, *Z. aeruginosa*, *Zale obliqua/submediana*, *Allotria elonympha*, *Catocala ilia*, *C. lacrymosa*, *C. ultronia*, *C. andromedae*, *C. mira*, *C. similis*, *C. alabamae*, *C. grynea*, *C. micronympha*, *C. amica*, *Ctenoplusia oxygramma*, *Meganola phylla*, *Nola* sp. near *pustulata*, *Marathyssa inficita*, *Paectes absotroloides*, *P. pygmaea*, *P. oculatrix*, *Baileya levitans*, *B. australis*, *B. ophthalmica*, *Comachara cadburyi*, *Cydosia majuscula**, *Ozarba aerea*, *Thioptera nigrofimbria*, *Hyperstrotia pervertens*, *H. villificans*, *H. nana*, *Tripudia* sp. 1*, *Tripudia* sp. 2*, *Spragueia leo*, *Tarachidia erastrionides*, *Homophoberia apicosa*, *Cerma cerintha*, *Acrionicta tritona*, *A. afflicta*, *A. lobeliae*, *A. hasta*, *A. morula*, *A. inclara*, *A. ovata*, *A. exilis*, *A. vinnula*, *Acrionicta* sp. (pale, big)*, *Polygrammate hebraeicum*, *Agriopodes fallax*, *Emarginea percara*, *Eudryas unio*, *Argillophora furcilla*, *Phosphila miseloides*, *Chytonix palliatricula*, *Iodopepla u-album*, *Condica videns*, *Ogdoconta cinereola*, *Azenia (Stiriodes) obtusa*, *Perigea xanthoides*, *Balsa malana*, *Elaphria chalconia*, *E. versicolor*, *E. grata*, *Amphipyra pyramidoides*, *Orthodes crenulata*, *Spodoptera ornithogalli*, *Agrotis venerabilis*, *Helicoverpa zea*. **DREPANIDAE**: *Oreta rosea*. **GEOMETRIDAE**: *Mellila xanthometata*, *Eumacaria laetiferrugata*, *Macaria aemulataria*, *M. promiscuata*, *M. bicolorata*, *M. bisignata*, *M. transitaria*, *M. minorata*, *Digrammia gnophosaria*, *Exelis pyloraria*, *Gelnoides texanaria*, *Glena cribrataria*, *Anavitrinella pampinaria*, *Iridopsis defectaria*, *I. vellivolata*, *Ectropis crepuscularia*, *Protoarmia porcellaria*, *Melenolophia signataria*, *Hypagyrtis unipunctata*, *H. esther*, *Lomographa vestaliata*, *Thysanopyga intractata*, *Erastria cruentaria*, *Euchlaena amoenaria*, *E. sp.* near *tigrinaria*, *Pero morrisonaria*, *Xanthotype* sp., *Besma quercivoraria*, *Plagodis fervidaria*, *Probole* sp., *Metarranthis homuraria*, *Eutrapela clemataria*, *Nematocampa resistaria*, *Nemoria lixaria*, *Idaea obfusaria*, *Eubaphe mendica*, *E. meridiana*.

(COUNTY, very uncommon in STATE), *Eulithis diversilineata*, *E. gracilineata*, *Calothysanis armaturaria**, *Cyclophora packardi*, *Cyclophora* sp., *Disclisioprocta stellata*, *Eupithecia miserulata*, *Dyspteris abortivaria*.
PYRALIDAE: *Dioryctria merkei*, *D. clarioralis*, *D. amatella*, *Conchylodes ovulalis*, *Polygrammodes flavidalis*, *Pyrausta laticlavata*, *Munroessa gyralis*, *Condylomia participalis*, *Melitara prodenialis*, *Clydonopteron tecomae*, *Heculia olinalis*, *Uresiphita reversalis*, *Diacme elealis*, *Nomophila nearctica*, *Palpita magniferalis*, *P. illibalis*, *Colomychis talis*, *Desmia funeralis*, *D. maculalis*, *Diasemioides janasialis*, *D. nigralis*, *Crambus agitatellus*.
LIMACODIDAE: *Isa textula*, *Apoda y-inversum*, *A. biguttata*, *Parasa chloris*. **MEGALOPYGIDAE:** *Megalopyge opercularis*. **TORTRICIDAE:** *Eucosma robinsonana*. **OECOPHORAE:** *Antaeotricha schlaegeri*.
LACTURIDAE: *Lactura pupula*. **URODIDAE:** *Urodus parvula*. **PRODOXIDAE:** *Tegeticula yuccasella*, *Prodoxus decipiens*. **SESIIDAE:** *Pennisetia marginata*, *Synanthedon rubrofascia*. **PSYCHIDAE:** *Cryptothelia gloveri*.

John Hyatt and Charles Covell, Jr., collected the coastal marshes of McIntosh Co. near Darien on May 14&15. Basically, butterfly collecting was pretty dismal. Fewer than 30 species were seen or netted, and the number of individuals was very low indeed. Folk thereabouts related that spring had been very late and very cool, so perhaps we were early for the usual mid-May flight of skippers and hairstreaks.

Material taken included *Lethe portlandia*, *Asterocampa celtis* (both at bait, along with various *Zales*, *Catocala ilia*, *C. micronympha*, and *C. mira*). Big swamp skippers were a focus of our attention, but much slogging in hip boots through the poorly-blooming pickerel weed marshes yielded only a single male of *Problema bulenta* (a 2nd was observed) and a handful of *Poanes viator*, along with a couple of *delaware* and some female *vibex*. No sign of *dukesi*, *byssus*, *arroni*, *pilatka*, or *arpa* (all sometimes seen at this time of year).

A visit to the Griffen Ridge WMA in Long Co. disclosed what looked like a hairstreak heaven - many species of oaks in open woods, interspersed with flowering sparkleberry trees. However, not a single Lycaenid was found (nor any other butterflies save the odd painted lady)! A return to the site by Hyatt on the 19th of May led to observation of one single unidentified hairstreak; Hyatt also took one male *E. favonius* in McIntosh Co., nectaring on oleander. By the end of the week (May 19-21) the butterfly population was picking up a little, with several species seen for the first time - but numbers of individuals remained low throughout the period. Moths were sparse at bait and lights in this region all week.

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

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

Ricky sends the following Spring report: *Enodia portlandia missarkae* and *Cyllopsis gemma gemma*, 3.2 miles west of Lorman, Jefferson County, 30 March 2005; *Libtheana bachmannii bachmannii*, worn male mile marker 110 on Natchez Trace Parkway, Madison County, MS, 22 March 2005 (overwintered?); *Mitoura grynea grynea* and *Incisalia henrici turneri*, Trace State Park, Pontotoc County, 25 March 2005.

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

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. WC = Will Cook, RG = Ron Gattelle, HL = Harry LeGrand, JP = Jeff Pippen.

The spring season was quite delayed, by an average of 7-10 days, by cool weather, and probably also by lower than usual rainfall at most sites. Thus, there were very few surprisingly early reports, but many record-breaking late dates. *Vanessa cardui* was reported as numerous as they have been in a decade or more, but *Danaus plexippus* sightings continue to be few in number, continuing an alarming trend in recent years. Records are from March - May 2005.

PAPILIONIDAE:

Papilio appalachiensis, the peak count of this newly-described species was 80, as noted in Haywood on May 13 by WC, HL, and JP. New locations were provided by Jonathan Mays this spring for Buncombe (COUNTY), Henderson

(COUNTY), and Jackson (COUNTY). This is a common species, no doubt occurring in all NC mountain counties.

LYCAENIDAE:

Feniseca tarquinius, normally quite scarce in the state, there were a remarkable number of reports for the spring season. Individuals were noted in Alleghany (COUNTY), Ashe, Buncombe, Caswell, Clay, Durham, Jackson (COUNTY), and Macon.

Callophrys irus, HL saw a fresh female, perching on *Baptisia cinerea* (its hostplant at the site), on May 7 near Raeford in Hoke (COUNTY). The latest ever in the state, by one day, was two seen by Parker Backstrom on May 14 at a new site in Moore where he first found several on April 28.

Celastrina nigra, Shay Garriock found three males on April 20 in Jackson (COUNTY). A state record high count of 20 adults was made by Rob van Epps at a known site in Graham on April 29. Also, WC and HL observed a state record late individual in Clay on May 14.

Glaucopsyche lygdamus, the species flew much later than normal at a known site in eastern Clay, as WC and party noted them on May 14 and 21, and RG saw the species there on May 27. The species normally flies in the latter part of April and the first 10 days of May.

NYMPHALIDAE:

Agraulis vanillae, extremely early for the Piedmont was one adult seen by Jim Nottke on his farm in Forsyth on April 22. The previous early date in the Piedmont was in early July!

Phyciodes incognitus, there were a number of reports, all from Clay, with the best total being of approximately 30 seen (and some photographed) on May 21 by WC, HL, and JP. This is a newly described species from the southern and central Appalachians; it is not rare, at least locally, but as it looks very similar to other *Phyciodes* species, its range and abundance will take many years to determine.

Chlosyne gorgone, this species, of peripheral occurrence in the state, appears to be barely hanging on, as despite much search at known locations this spring, only one individual could be found, by RG at a known site in Clay on May 27. The date is a record late one for the state, implying a very late flight for the brood.

Vanessa cardui, perhaps a record number of spring-season reports were made in 2005. There were at least 14 reports from around the state, with the best counts being of five individuals.

Limenitis archippus, Jim Nottke observed one at his farm in Forsyth on the very early date of April 11. Normally, the species isn't seen in the state until the end of April or early May.

Megisto viola, this taxon, if indeed a good species, is now known to occur in the state, at least near the southern coast. Reports this spring were of seven individuals from Craven in Croatan National Forest on May 4 (Parker Backstrom), a few in nearby Carteret on May 7 (Randy Emmitt), and 20 at Carolina Beach State Park in New Hanover on May 9 (Emmitt). To these reports should be added a total of 25 seen at the Craven site three years earlier, on May 3, 2002, as noted and photographed by Emmitt. Note that this coastal flight takes place during the first half of May (and probably begins in April), and is finished by the time the flight of *Megisto cymela* begins there, starting roughly around May 20-25. There is still much to be known about how many species of *Megisto* are actually present in the state.

HESPERIIDAE:

Autochton cellus, Jonathan Mays observed one along the Nottely River in Cherokee (COUNTY) on April 25, the only spring report for the state of this rarely seen species.

Erynnis martialis, very rare in the mountains was an individual photographed in southern Ashe (COUNTY) by Ted Wilcox on May 12. In fact, this was the only spring report for the state.

Pyrgus wyandot, after going many decades without a documented record in the state, Ted Wilcox photographed a small population in southern Ashe (COUNTY) this spring. He found one on April 11, four on April 14, three on April 22, and one still present there on May 10. The habitat was a wide dirt road through an upland forest, at 3100

feet. After hearing of this discovery, HL and WC searched potential spots in Ashe and Allegheny soon thereafter, and they were rewarded with finding one in Allegheny (**COUNTY**) on April 17, photographed by Cook. The habitat was a dirt road/track alongside an upland forest, at 3300 feet. There were no previous NC records for the northern mountains; instead, the old records were from Polk and (apparently) Transylvania, despite the main part of the range of this very rare taxon – a Federal Species of Concern – being the central Appalachians.

Euphyes bimacula, HL and JP made searches for this rare species at several sites in Johnston and Harnett on May 29. After a few failures they hit a new colony in Harnett, counting and photographing about six individuals, which were using a rare species – *Iris prismatica* – for the primary nectar source!

South Carolina: Ron Gatrell, 126 Wells Rd., Goose Creek, SC 29445, E-mail: gatrell@tils-ttr.org

Tennessee: John Hyatt, 5336 Foxfire Place, Kingsport, TN 37664, E-mail: jkshyatt@aol.com

J. Hyatt reports warm weather and good flights of early spring species (*G. marcellus*, *P. troilus*, *A. midea*, *P. virginiensis*, *C. ebenina* (=nigra) in the first two weeks of April in the southern Appalachians. However, the weather then turned sour, with low temperatures (a late freeze and light snow on April 24 defoliated many trees in the mountains), rain, and disappearance of all butterflies. To date (May 29) weather in the mountains has been cool and cloudy, and the recovery of butterfly populations has been poor.

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

Virginia: Harry Pavulaan, 494 Fillmore Street, Herndon, VA 22070, E-mail: pavulaan@aol.com

Harry reports one record “of any real interest”: *Autochton cellus* 6/18/05, George Thompson WMA, near Markham, VA., Fauquier Co. (Net/release, H. Pavulaan). Not a county record, but significant.

The Southern Lepidopterists' News is published four times annually. Membership dues are \$15.00 annually. The organization is open to anyone with an interest in the Lepidoptera of the southern United States. Information about the Society may be obtained from Paul Milner, Membership Coordinator, 272 Skye Drive, Pisgah Forest, NC 28768, and dues may be sent to Jeffrey R. Slotten, Treasurer, 5421 NW 69th Lane, Gainesville, FL 32653.

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