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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

FAGITANA LITTERA (GUENÉE, 1852) (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA BY

VERNON ANTOINE BROU JR.



Adults of the small in size noctuid moth *Fagitana littera* (Guenée) (Fig. 1) have been captured in Louisiana during the months March into September (Fig. 2). *F. littera* is never captured in great numbers and is usually encountered as singletons in ultraviolet light traps. Latham (1953) remarked that *littera* is a scarce species throughout its

Fig. 1. Fagitana littera (Guenée) a. male, b. female.



Fig. 2. Adult Fagitana littera captured at sec.24T6SR12E, 4.2 mi. NE of Abita Springs, Louisiana. n = 127.

range. Latham also reported 20 light captured specimens of *littera* over 25 years at Long Island, New York. He also discovered a green larva feeding on marsh fern *Aspidium thelypteris* (L.) with subsequent emergence of an adult *littera*. The same fern species *thelypteris* is also found statewide in Louisiana (Brown and Correll, 1942). *F. littera*

VOLUME 32 NO. 1 (2010), PG. 2



Fig. 3. Parish records for F. littera.

appears to have at most three annual broods in Louisiana (Fig. 2). I have taken *littera* in three parishes in southeast Louisiana (Fig. 3). Rockburne and Lafontaine (1976) reported the Canadian National Collection has only a single specimen taken at Ottawa in June. These authors report that *littera* is considered to be rare and sporadic, and the foodplant is *Thelypteris palustris* Schott, a marsh fern.

Knudson and Bordelon (1999ab) listed *littera* in their checklist for the state of Texas and illustrate it on plate 12 in their illustration's volume (1999a) of lepidoptera of the Big Thicket National Preserve, stating it is uncommon and local there. Heppner (2003) listed the range of *littera* to include Ontario to Florida and Michigan to Texas, with dates March through May.

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

WHAT DID SHAKESPEARE MEAN BY 'WE WILL ALL LAUGH AT GILDED BUTTERFLIES'?

"We two alone will sing like birds i' the cage... ...so we'll live, And pray, and sing, and tell old tales, and laugh At gilded butterflies, and hear poor rogues Talk of court news; and we'll talk with them too, Who loses and who wins; who's in, who's out; And take upon's the mystery of things, As if we were God's spies..." — King Lear, Act V, Scene iii⁽¹⁾

"The quote is from King Lear, who is ruefully pondering his own folly after finding out two of his daughters have betrayed his trust in order to take his fortune. 'Gilded butterflies' would generally mean someone overdressed or overly fancy in order to appear more than they are, like a courtier. Lear wold be comparing his avaricious daughters to gilded butterflies, appearing to be valuable and beautiful on the outside, but are mere whimsical and insubstantial inside.

A further overtone is in one meaning of 'gilded', which is 'covered in blood', an obvious metaphor for violence or death. Laughing at the above world be a form of derision." $^{(2)}$

Sources

1) http://www.suite101.com/article.cfm/interpreting shakespeare/70166

2) WikiAnswers. Date assessed the website 6 December 2008: <<u>http://wiki.answers.com/Q/What_did_Shakespeare_mean_by_%27We_will_all_laugh_at_gilded_butterflies%27></u>

The Southern Lepidopterists'

Society

OFFICERS

VOLUME 32 NO. 1 (2010), PG. 3

Page

L		
	1.	Fagitana littera (Guenée, 1852)(Lepidoptera:
l	2	What Did Shakespeare Mean by 'We Will All
l	2.	Laugh at Gilded Butterflies '? ?
	3.	Donations to the SLS for 2010.
	4.	James' Challenge to the SLS Membership for Articles on
I		"First Encounters" and "Dangers of Lepping"
l		Continues into 2010
	5.	New Moon dates
	6.	Distribution of the Brown Elfin, Callophrys augustinus,
I		in Georgia by Lance A. Durden5
	7.	First State Record of Lyside Sulphur in Louisiana
I		by Jeff Trahan and Terry Davis
I	8.	Welcome to Two New Members
	9.	A Little-Known Historical Collection of Florida Butterflies,
I		Moths, and Other Insects at Rollins College, Winter Park
	10	by Marc C. Minno
1	10.	The Monarch's Trans-Guil Express: "A Clockwork Orange
	11	Or Oracing the Perplaying Waters of the Delaware
I	11.	by Craig W Marks 25
	12	Theona Checkerspot (Thessalia theona) Life History
1	12.	by Berry Nall 29
	13.	Dusky-Blue Groundstreak [Calvcopis isobeon
		(Butler & H. Druce, 1872)] versus Red-Banded Hairstreak
		[Calycopis cecrops (Fabricius, 1793)]
		by J. Barry Lombardini
	14.	Eric and Pat Metzler Visit Vernon and Charlotte Brou 32
1	15.	Acronicta americana (Harris, 1841)(Lepidoptera:
1		Noctuidae) in Louisiana by Vernon A. Brou Jr
1	16.	SLS Granted Public Charity Status
	17.	James Adams - Photographs from California
l	18.	Phrygionis privignaria Guenee 1857 (Lepidoptera:
	10	Definitions
	20	"Francingani Worm" Pseudosphiny tetrio (Linnaeus, 1771)
	20.	Reaches Tampa Bay by Don Stillwaugh 39
I	21	Cvanophrvs goodsoni (Clench 1946) (Lenidontera:
		Lycanenidae: A First Encounter by Mike Rickard
	22.	Reports of State Coordinators
	23.	References to Butterflies, Moths, and Caterpillars
		in Shakespeare
	**	***************************************

INDEX

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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:

\$20.00
\$15.00
\$30.00
\$50.00
\$70.00

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

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

DONATIONS TO THE SOUTHERN LEPIDOPTERISTS' SOCIETY FOR 2010 MANY THANKS TO THE FOLLOWING MEMBERS

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JAMES' CHALLENGE TO THE SLS MEMBERSHIP FOR ARTICLES ON "FIRST ENCOUNTERS" AND "DANGERS OF LEPPING" CONTINUES INTO 2010

James Adams has graciously agreed to continue his challenge for the year 2010. To get started, I believe that we have three articles that qualify for his \$10 donation (up to a total of \$100) for articles on "*First Encounters*" and "*Dangers of Lepping*". They are the following:

- 1) "First State Record of Lyside Sulphur in Louisiana" by Jeff Trahan and Terry Davis
- 2) "Crossing the Perplexing Waters of the Delaware" by Craig W. Marks
- "Cyanophrys goodsoni (Clench, 1946)(Lepidoptera: Lycanenidae): A First Encounter" by Mike Rickard

Whether these three articles meet James' criteria will be his decision, but in any event the Society thanks James for his generosity and creative challenge. [The Editor]

NEW MOON DATES

April 14	July 11	October 7
May 14	August 10	November 6
June 12	September 8	December 5

DISTRIBUTION OF THE BROWN ELFIN, CALLOPHRYS AUGUSTINUS, IN GEORGIA BY LANCE A. DURDEN

The brown elfin, *Callophrys augustinus*, is fairly widely distributed across the USA (Scott, 1986; Friedman, 2009) but, until recently, its reported range in Georgia and Florida was limited mostly to certain northern counties



Fig. 1. Map of southeastern U.S. States showing approximate reported distribution (yellow), recent (2009) Florida records (blue diamonds), Bibb County, Georgia record (blue arrow) and Harris County, Georgia record (black arrow) of the brown elfin, *Callophrys augustinus*.



Fig. 2. Brown elfin specimen collected in Harris County, Georgia, on 18 March 1990.

in the former state (Fig. 1). For Florida, that all changed when Calhoun et al. (2009) and Friedman (2009) documented adult or larval C. augustinus from three localities in two counties in northwestern Florida with a suspected fourth site in a third county (the last record was based on parasitized larvae that did not develop to adults) (Fig. 1). These records almost certainly demonstrate that this butterfly is established in parts of northern Florida. However, these Florida records also pose a question concerning the true distribution of C. augustinus in Georgia. Although the Florida population(s) could be disjunct and isolated, this seems It is more likely that there is a unlikely. continuous population from northern Georgia to northern Florida. An enticing piece of evidence that may support this premise is a record of C. augustinus from Macon, Bibb County, Georgia (Fig. 1), on 27 March 1961 reported by Harris (1972). Another piece to the puzzle may be represented by a specimen of C. augustinus (Fig. 2) that I collected in Harris County, Georgia (about 3 miles south of Pine Mountain),

on 18 March 1990. When I collected this specimen, I realized it was outside of its known range but not enough so in my opinion to warrant reporting it. However, the recent Florida records appear to impart more significance to this specimen.

The main foodplant of larval *C. augustinus* in Florida and in much of its eastern U.S. range appears to be mountain laurel, *Kalmia latifolia*, which is distributed throughout almost all of Georgia (and much of northwestern Florida) (Calhoun *et al.*, 2009; Friedman, 2009; Little, 1980). Therefore, from a foodplant standpoint, there should be no reason why there could not be a continuous population of this butterfly between northern Georgia and northern Florida. Future searching and recording in central and southern Georgia will hopefully show this to be the case.

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FIRST STATE RECORD OF LYSIDE SULPHUR IN LOUISIANA BY JEFF TRAHAN AND TERRY DAVIS



Fig. 1. Lyside Sulphur (dorsal) observed October 29, 2006, in Bossier Parish, LA. (Photo by Jeff Trahan)



Fig. 2. Lyside Sulphur (ventral) observed October 29, 2006, in Bossier Parish, LA. (Photo by Jeff Trahan)

The Lyside Sulphur (*Kricogonia lyside*) is a tropical species whose range in the US is mainly south Texas but is sometimes seen in south Florida. It is occasionally found in Arizona, New Mexico, Colorado, and Kansas. There is a record of it in Missouri, and even one in Kentucky, but not in Louisiana.

I received a call from Terry Davis October 29, 2006, who said that he had a very unusual butterfly at Cane's Landing in Bossier City, Bossier Parish, Louisiana. I quickly got into my car with my camera and drove to his location. Enroute, I got another call from him during which he said that he had identified the butterfly as Lyside Sulphur. When I arrived, I verified that he did have a Lyside Sulphur and photographed it. See Figures 1 and 2 for the dorsal and ventral photos of this individual. The butterfly was first observed by Terry nectaring on brazilian vervain (Verbena brasiliensis) on a tall-grassed, weedy slope near the edge of a narrow strip of riparian woods. Terry did not have a net with him at that time, so he hand captured the butterfly in order that it would not be lost for the record. He noted some wear on the butterfly before capturing it such as the small torn areas in the forewing and the larger torn area in the hindwing. The scale loss in the forewing was a result of the capture. As far as I can determine, this is the first record of this species in Louisiana.

Like this Lyside Sulphur, strays from south Texas appear to migrate into northwest Louisiana most often in late summer and fall. This is probably due to the strong southwest winds blowing from south Texas that we occasionally experience at this time of year.

(Jeff Trahan, E-Mail: jftrahan@bellsouth.net)

WELCOME TO TWO NEW MEMBERS

Chris Grinter 1217 B University Ave. Berkeley, CA 94702 Kristen R. Benjamin 209 West Dodson St. Arkadelphia, AR 71923

A LITTLE - KNOWN HISTORICAL COLLECTION OF FLORIDA BUTTERFLIES, MOTHS, AND OTHER INSECTS AT ROLLINS COLLEGE, WINTER PARK BY MARC C. MINNO

James L. Hulbert is an aquatic ecologist and an Adjunct Professor in the Department of Environmental Studies at Rollins College in Winter Park, Florida. For several years, he has mentioned to me about an insect collection taking up room in his office and that none of the staff have any interest in it. When I saw Jim at the Florida Association of Benthologists Annual Meeting in Cedar Key, Florida, in November 2009, he suggested that I examine the collection to see if it has any scientific value. Further, the Science Building where the collection is housed is scheduled to be renovated in 2010 and everything must be removed.



Fig. 1. The Rollins College insect collection: A) general view of the cabinets, B) view of the museum drawers, and C) some of the exotic insect specimens in antique frames.

On December 29, 2009, I met Jim at Rollins College. We spent several hours browsing through the collection. There are four 12-drawer and two 24drawer Lane cabinets with Cornell-type museum drawers (Fig. 1a,b). The cabinets have been well-fumigated and reek of naphthalene and paradichlorobenzene. I did not see any chewed or molded specimens. A few drawers were empty, but most had nicely mounted insects including Odonata, Orthoptera, Hemiptera, Homoptera, Coleoptera, Diptera, Lepidoptera (Fig. 2), and other groups. Some of the drawers had unit trays. Much of the collection is organized by order, family, and species, although a number of the drawers are of mixed orders and species. Some species are identified with heading labels.

The data labels on the specimens are mostly type printed with hand written dates, and although old and brown,

they are readable. Many of the specimens had been collected during the 1930's and 1940's by E. M. Davis and J. A. Fluno, as well as some by K. Scudder, M. J. Westfall, Jr., Dean Berry, and others. Although I had heard of the Odonata specialist Minter Westfall, Jr. and Florida Lepidopterist Dean Berry, I had no knowledge of the other collectors. Could K. Scudder be related to Samuel Hubbard Scudder? There are some drawers of specimens from the 1960's that appear to be student collections, but the bulk of the specimens seem to have been amassed decades ago by Davis and Fluno. Most specimens are from central Florida, especially Orange County, perhaps from the Rollins campus or vicinity of Winter Park.

In addition to the insect cabinets, there are two tall and one short, double-door Lane cabinets with large, deep aluminum drawers (no tops) that were likely meant for mammal or bird specimens. However, housed in these

VOLUME 32 NO. 1 (2010), PG. 8

drawers are individual frames bearing exotic tropical insects representing colorful, large, or unusual species (Fig. 1c). The thin frames have glass on top and bottom to allow viewing of the specimens. On the side of each frame, hand-written in ink is the scientific name and country of origin of the specimen. These antique specimens, beautifully mounted and displayed, were probably used in early biology classes at Rollins College. There are some other old special collections in wooded cases from Wards having themes such as "*Crop Pests*". Although of limited scientific value, these old displays are in very good condition, apparently having been little used and safely stored for decades. Lastly, there is an old metal cabinet that had been used for specimen preparation containing dozens of unsorted, pinned insects.

Later I searched through Kimball (1965) and Heppner (2003) for the names I had found on the specimen labels, but did not find mention of any of them. On the world wide web I found a document posted by Rollins College entitled "*Courses of Instruction*" dated *ca.* 1934¹. Under courses in biology there's a brief statement about the



Fig. 2. Butterflies in the Rollins College insect collection: A) Miami Blues, B) skippers, C) swallowtails, D) beetles and butterflies, and E) Miami Blues and other butterflies.

Rollins College Thomas R. Baker Museum for Natural History. I also checked the web for Davis and Fluno and discovered that they and the Thomas R. Baker Museum were cited in an article published by Minter Westfall, Jr. (then at Cornell University) in 1943. E. M. Davis published a few notes on dragonflies (1938,1940) and also published with J. A. Fluno (1938) on the Odonata of Winter Park, Florida.

So it appears that this Rollins College insect collection was part of the Thomas R. Baker Museum for Natural History. Indeed in the same room as the insect collection there are also cabinets with plant, mammal, and mineral specimens. Jim also showed me a small building on campus that is still inscribed "The Shell Museum" over the doorway. According to Jim, this building had housed a collection of mollusk shells, which was donated to the University of Florida years ago. The insect collection seems to have been largely forgotten, with no new material added after the 1940's except for some student collections. It is an interesting time capsule, now unearthed to reveal something of butterflies and moths present during a period when Florida was mostly a rural state.

There are several hundred specimens of Florida butterflies and moths in the Rollins College collection, mostly common species. However, also represented are some currently imperiled species of butterflies such as the Miami Blue (*Cyclargus thomasi bethunebakeri*)

(Fig. 2a), Florida Leafwing (Anaea troglodyta floridalis), Florida White (Glutophrissa drusilla neumoegenii), Arogos Skipper (Atrytone arogos arogos), and Loammi Skipper (Atrytonopsis loammi) (Table 1). This collection

¹ http://archives.rollins.edu/cdm4/document.php?CISOROOT=/students&CISOPTR=111&REC=1

gives an indication of the former abundance of some of these butterflies, such as E.M. Davis collecting five Miami Blues at Royal Palm Park (now Royal Palm Hammock in Everglades National Park) on April 18 and eight on December 29, 1936. Barbara Lenczewski (1980) commented that the Miami Blue was reported to be extremely common in the Miami area in the 1930's and 1940's, but was last seen in Everglades National Park on May 10, 1972, by Charlie Covell, Jr. The Florida White also seems to have been common at Royal Palm Hammock in the 1930's judging from the Rollins Collection. Lenczewski (1980) speculated about this butterfly *"The scarcity of park records is probably due to the paucity of collecting within hammocks other than Royal Palm."* Currently, the Florida White no longer occurs in Everglades National Park, but is locally common in some small preserves in southeastern Miami-Dade County. The Florida Leafwing is now very close to extinction, and is only found in the pine rocklands of Everglades National Park. It would be unimaginable today to find an Arogos Skipper anywhere in Winter Park, a suburb of Orlando. Even common species in the collection are of interest. For instance, there are a number of specimens of the Cabbage White (*Pieris rapae*) from Orange County. This butterfly still occurs in northern parts of the state, but is very uncommon in central Florida.

In the coming months I will be working with Jim to have the Lepidoptera in the Rollins College collection donated to the Florida Museum, McGuire Center, and the other insects incorporated into the Florida State Collection of Arthropods.

SPECIES	COUNTY	LOCALITY	DATE	SEX	COLLECTOR
LYCAENIDAE					
Cyclargus thomasi bethunebakeri		Merritt's Island	11/15/1937	F	D.F. Berry
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	4/18/1936	F	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	4/18/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	4/18/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	4/18/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	4/18/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	F	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Miami-Dade	Royal Palm Park	12/29/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Cape Sable	12/29/1934	М	J.C. Howell
Cyclargus thomasi bethunebakeri	Monroe	Upper Matecumbe	4/19/1936	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	4/22/1937	F	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	3/18/1938	F	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	3/18/1938	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	3/18/1938	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	3/18/1938	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	3/18/1938	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Key Largo	3/18/1938	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Monroe	Lower Matecumbe	3/20/1938	М	M.J. Westfall, Jr
Cyclargus thomasi bethunebakeri	Palm Beach	ALL ALL AND ALL	12/1/1940	F	E.M. Davis
Cyclargus thomasi bethunebakeri	Palm Beach		12/1/1940	F	E.M. Davis
Cyclargus thomasi bethunebakeri	Palm Beach		12/1/1940	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Palm Beach	and a second second second	12/1/1940	М	E.M. Davis

Table 1. Specimens of currently imperiled butterflies in the Rollins College collection.

VOLUME 32 NO. 1 (2010), PG. 10

Cyclargus thomasi bethunebakeri	Palm Beach		12/1/1940	М	E.M. Davis
Cyclargus thomasi bethunebakeri	Palm Beach		12/1/1940	М	E.M. Davis
PIERIDAE	and a second	deal ball to a	Las I a Bar	a has to	the second second
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	3/29/1936	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	4/18/1936	F	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	4/18/1936	F	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	4/24/1937	F	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	F	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	F	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Miami-Dade	Royal Palm Park	2/21/1939	М	E.M. Davis
Appias drusilla neumoegenii	Monroe	Key Largo	6/15/1959	М	C.E. Keene
NYMPHALIDE					
Anaea troglodyta floridalis	Miami-Dade	Royal Palm Park	4/18/1936	М	E.M. Davis
Anaea troglodyta floridalis	Miami-Dade	Royal Palm Park	4/24/1937	М	E.M. Davis
HESPERIIDAE					
Atrytone arogos arogos	Orange Co	Winter Park	7/5/1935	М	J.A. Fluno
Atrytone arogos arogos	Orange Co		10/11/1938	М	D.F. Berry
Atrytonopsis loammi	No Data				

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THE MONARCH'S TRANS - GULF EXPRESS: "A CLOCKWORK ORANGE" BY GARY NOEL ROSS

The monarch has received more hype than any other butterfly. In fact, *Danaus plexippus* is generally considered the quintessential butterfly. For instance: The very name, "monarch," denotes royalty (Ross, 2001a,b); the species is the most studied of all butterflies, often used in texts to illustrate a typical butterfly life cycle; monarch larvae sequester specific phytochemicals from their milkweed host plants that render them and their adults distasteful to many predators; and the monarch-milkweed association is an iconic example of co-evolution between the plant and animal kingdoms. But perhaps the butterfly's most legendary and enigmatic attribute is the monarch's annual fall and spring migrations—unparalleled in the animal kingdom.



Gary collecting monarchs for tagging in wildflower meadow on chenier near Johnson Bayou. White-flowering plant is piny aster (*Chloracantha spinosa*), a species that may contain phytochemicals sequestered by monarchs (October 1991).



Dewberries grow in abundance during the spring on Grand Chenier. The flowers are an excellent source of nectar for monarchs (April 1991). Because monarchs are ancestrally tropical milkweed butterflies, they are unable to tolerate the winter climes of northern or even most temperate geographies. Like human "snow birds," each autumn hundreds of millions of monarchs east of the Rocky Mountains in both the United States and Canada begin to wing



Mature live oak on Chenier Perdue (May 1991).

their way southward toward the Gulf of Mexico, Texas, or Florida. At this same time, the smaller number of monarchs west of the Rockies moves toward the coastline of California. These featherweight international travelers fuel their journeys by converting sugars derived from flower nectars into high-octane fat reserves. In addition, the butterflies suspend energy-sapping reproductive activities.

Accordingly, the monarch migrations have been intensively studied and popularized over the years. Here is the gist: Whereas monarchs west of the Rocky Mountains seem content to hangout along the Pacific coast, the vast majority of eastern monarchs target the high-altitude coniferous forests of central Mexico, specifically the Transverse Neovolcanic Belt, a mineralrich mountain range within the states of Mexico and Michoacan. (Some monarchs, however, do remain in the southern U.S. where they reproduce throughout the winter). Arrival time usually is early November, a time that coincides with the Mexican tradition of honoring the dead on All Saints and All Souls Day. (Most indigenous cultures of central Mexico believe that the monarchs actually represent the souls of deceased love ones.) At this time cemetery plots are manicured, and graced with food and beverage as treats for visiting spirits.

Monarchs in Mexico spend the months of winter in a state of reduced activity, awaiting the return of the warmth of spring. Then the butterflies fly about, mate and begin moving northward. They soon reach Texas

where they fan out into the Midwest and the Gulf states. Along the way, females lay their eggs (several hundred) on their host plants—numerous species of milkweed (*Asclepias*). The butterflies then die. The new generation matures within a few weeks. These adults continue their northward journey all the while ovipositing on

VOLUME 32 NO. 1 (2010), PG.12



Migratory monarchs warming themselves on Spanish moss in the morning sun in Peveto Woods Sanctuary (Baton Rouge Audubon Society) near Johnson Bayou (September 1993).



Migratory monarchs resting in hackberry tree in Peveto Woods Sanctuary (Baton Rouge Audubon Society) near Johnson Bayou (October 1990).

milkweeds. This "business as usual" continues through three or perhaps even four to five short-term generations. In the end, some monarchs reach the northern limits of milkweed plants-the prairie provinces of Canada and the farmlands of New England, southern Ontario and Quebec. With the return of autumn, last generation

butterflies—like their ancestors countless years before—cease reproductive activities, begin accumulating fat reserves, and begin moving southward as virgin fall migrants. (In other words, no single monarch migrates to Mexico more than once in its lifetime.)

Up until fairly recent times, empirical data have indicated that the vast majority of the eastern monarchs enter Mexico by way of land routes to and through central Texas. They then ascend the Sierra Madre de Oriente and the Central Plateau, eventually winding up at 9,000-12,000 feet in the Transverse Neovolcanic Belt of central Mexico. This paradigm pivots on a migration that is land-based and during daylight hours. But in 1990 the

following note by Bryant Mather (1916-2002) appeared in *News of the Lepidopterists' Society* (July/August), No. 4, page 59:

"On the 17th and 18th of October, every year for the past 18-19 years, monarch butterflies in immense numbers alight on and rest on an off-shore oil production platform out in the Gulf of Mexico. Mrs. Hylma Gordon of Hattiesburg, Mississippi, told me about this on January 12, 1989 when I was speaking about lepidoptera at a meeting of the Pine Woods Chapter of the National Audubon Society in Hattiesburg. She later gave me more details in a letter dated 31 Jan 1989. In her words: 'The experience on the rig was certainly an unforgettable one to see the cloud coming from all around in a mass that settled on every available space from the top of the derrick to the floors. Everything was covered to the depth of several layers. There were butterflies on top of butterflies. The deck hands were busy with wash-down hoses and had to keep it up to be able to handle the gear while drilling. Some of the older hands said it was a yearly occurrence in the area. We were about 150 miles S. of Cameron, LA. One of the men who had worked in the area for 18-19 years said they came through on the 17th-18th of October. They thought the butterflies were using the rig to rest on and fly around in the daytime and come back each night to rest for three nights. The idea that they were different groups on the same flight route had not occurred to me until you mentioned it.'

A point about 150 miles south of Cameron, LA is pretty much on a straight line flight path from New Orleans to Michoacan, Mexico."

Wow! Was it possible that some monarchs were actually crossing the open waters of the Gulf rather than skirting the coast in order to reach Texas before entering Mexico? Free from university duties, I delved into the Mather report. Turns out that Mrs. Gordon served as a cook aboard a vessel that supplied many of the oil and gas drilling rigs and production platforms in the northwestern Gulf. She thought the rig in question was owned by Marathon Oil Company.

Now began the footwork. I drove from my home in Baton Rouge to Lafayette to consult with Marathon

VOLUME 32 NO. 1 (2010), PG.13



executives. There I learned that Marathon did not drill 150 miles into the Gulf (in truth, there were **no permanent** man-made structures at that distance). (Incidentally, Louisiana lays claim to the first oil well—1947—to come into production in the Gulf of Mexico. Today the state boasts a matrix of over 3,400 man-made oil and gas producing structures—more than any other state—that fan out nearly 170 miles into



the northern Gulf.) Marathon suggested I visit Petroleum Helicopters, Inc. (PHI), the largest company that ferries men and supplies to points within the Gulf, and headquartered at the Lafayette Regional Airport. There, I was surprised to learn that two PHI pilots, Charles "Chuck" E. Williams and Thomas "Tom" Schaal. both of

Dead monarchs on beach in Peveto Woods Sanctuary (Baton Rouge Audubon Society) near Johnson Bayou (October 1990; April 1992).

Lafayette, serviced rigs and platforms south of Cameron and that both were interested in wildlife, particularly the rehabilitation of birds that get injured or stranded offshore. And most exciting of all, Tom was on his seven-day off schedule and, therefore, at his home in Lafayette.

Visiting with Tom, I learned that he had been flying the Gulf for PHI for over two decades after returning from Vietnam. He remembered that on at least one-half dozen occasions he observed masses of monarchs so thick that they appeared as a stream of smoke moving southwest. The butterflies were flying above normal altitudes for helicopters (150-1000 feet). Also, he remembered that he had observed upwards of a thousand monarchs—particularly each October a day or two after the passage of a strong cold front from the north—resting on the fence surrounding a heliport on an offshore structure. Many of the butterflies routinely flew to a gas production platform know as West Cameron Block 280 (WC-280). Constructed in 1982 and located 72 miles south of Cameron, the platform was owned and operated by Unocal Corporation (Union Oil Company of California)—the company with the attractive logo: orange circle enclosing a blue/white 76. Tom suggested I contact Unocal to seek permission to board WC-280.



Lantana growing in abundance on Grand Chenier (May 1991). Flowers provide nectar for most butterflies.

Abundant *Coreopsis* along highway on Grand Chenier (June 1991).

Mature monarch larva on hostplant, Antelope horn milkweed, on Grand Chenier (April 1991).

That I did with a formal letter. Unocal was very interested in my proposal (after all, the publicity could be very advantageous to Louisiana's frequently maligned petroleum industry). And since WC-280 was operating with a reduced crew, bunk space would be available for both me and a cinematographer friend (Donald Valentine) from California's Moody Institute of Science who I had requested to document the experience. Unocal even sweetened the deal by offering to cover all expenses—a real bonus since neither Don nor I had funding.

Of course, timing was critical. Knowing that cold fronts pass through Louisiana every week or so in October and

VOLUME 32 NO. 1 (2010), PG.14



Antelope horn milkweed (hostplant for monarchs) on Monkey Island near Cameron. Plant is abundant on cheniers (May 1993).



Monarch egg on flower bud on antelope horn milkweed.



Mature monarch larva on hostplant, Antelope horn milkweed, on Grand Chenier (April 1991).



Aerial view of West Cameron-280, a gas production platform 72 miles south of Cameron (November 1992).



Aerial view of West Cameron-280.



Aerial view of West Cameron-280.



Helicopter (Petroleum Helicopters, Inc.) used to transport people and supplies to the petroleum industry's offshore structures (November 1994).

VOLUME 32 NO. 1 (2010), PG.15







Gary tagging monarchs (5 photographs) on West Cameron-280, a UNOCAL gas production platform south of Cameron, LA (October-November 1991).



Monarch bearing tag (November 1991)



Gary releasing tagged monarch from WC-280, a UNOCAL gas production platform (October 1991).



Monarch bearing tag (November 1991)



Tags provided by the University of Toronto and used for tagging monarchs (October 1991).

that the reported dates of October 17-18 were likely approximations, we decided to aim for the first week in October in 1991.

Thursday October 3. Don and I drive from my home to Intracoastal City, located south of Lafayette and Abbeville, and PHI's terminal for accessing the Gulf. We arrive about ten o'clock on a clear, warm morning. Following introductions and the weighing of equipment and ourselves, we are off.

The helicopter flight is my first. From an elevation of 700-1000 feet, the interface between the endless blue-green water domed by an azure sky creates an optical illusion: I feel as if the aircraft is hovering in space even though our actual speed is 110 kph (68 mph). After about 45 minutes, however, Tom points directly ahead: "*There she is: WC-280.*" I squint, but can make out only a pinpoint on the fuzzy horizon. But as we approach, the gray and yellow structure seems to mushroom. (In retrospect, I admit that until we actually touched down on the top heliport, I doubted that we could actually land in such a small space.)



Migrating monarchs resting on various pieces of equipment on WC-280, a UNOCAL gas production platform south of Cameron, LA (October-November 1993).

WC-280 is a stationery gas production platform anchored in 90 feet of water. The heliport of the platform is 92 feet above the water's surface. Once aboard, Don and I were shown about and orientated to offshore "dos and don'ts." After settling in, we waited with bated breath for the passage of a cold front.

Saturday October 5. Noon. A south-bound cold front moves through. The system produces a cloud bank—but no rain—and northerly winds of 30-38 mph. Swells of eight to ten feet lash the footings of the platform; in my bed, I can feel the entire structure sway. Eerie! The next day is clear, warm with easterly winds. Don and I spend most of the day atop the heliport, our eyes scanning the northern sky. Then, at about six in the evening a single monarch sails past the platform headed in a westerly to southerly direction. No other sighting.

Monday October 7. We observe two monarchs sailing over the heliport at 1:15 PM. Winds are from the east and several monarchs are sighted, again moving in a westerly to southern direction. But as the afternoon progresses, monarch numbers increase. By dusk butterflies began landing on the platform. At this same time, personnel from WC-196, a Unocal platform a bit closer to shore, telephone to report a dozen or so butterflies. Then we receive a call from WC-593, another Unocal platform but farther south in nearly 250 feet of water. "Approximately 1,000-2000 monarchs are circling equipment and lights," reports the dispatcher. Sadly, the darkness precluded

helicopter flights to the distant targets. But by maintaining intermittent contact with WC-593 we learn that after dark the butterflies gradually settled onto anything that could support them. Come dawn, the butterflies departed in a south-southwest direction.

VOLUME 32 NO. 1 (2010), PG.17



Migrating monarchs resting on various pieces of equipment on WC-280, a UNOCAL gas production platform south of Cameron, LA (October-November 1993).



During our 18-day residence, cold fronts moved through every five to seven days (including one on October 15). Monarchs always

followed, but never did stream in legions. Instead, small groups of 5-10 monarchs sailed in every hour or so. During this period monarchs were reported from 25 different platforms near WC-280. Although I was able to observe only several dozen monarchs on any given day aboard WC-280, Don was able to get exciting footage. (Some of these scenes are included in the MOODY INSTITUTE OF SCIENCE/QUESTAR VIDEO release: "*The Wonders of God's Creation*." That same title is offered on a set of DVDs by both MOODY PUBLICATIONS and QUESTAR, INC.) Additionally, I was able to tag nearly 100 monarchs for possible recovery by observers in Mexico (none was).

Still dreaming of a mass flight, I was guest aboard WC-280 each October between 1992 and 1995—usually for a period of from two to three weeks. Tom and Chuck always spread the word to their PHI colleagues (about 400-500 helicopters fly the Gulf on any given day) to report any butterfly sighting to WC-280. In fact, the PHI office circulated a special bulletin describing my project. Result? Hundreds of monarchs were reported from over the Gulf each year, ranging from eastern Louisiana to eastern Texas, and uncanny, often on or very close to the 17th-18th dates and always after the passage of a cold front. Never did I observe a "*cloud*" of butterflies as described by Mrs. Gordon, however. (Keep in mind, the Gulf is a massive body of water and most structures are unmanned, and thus not routinely visited.) Specific platforms are listed below:

East Cameron-48, Conoco (yellow) East Cameron-83, Conoco (white) East Cameron-117, Coastal Oil (yellow/gray) East Cameron-118, Cockrell Oil (yellow) East Cameron-222, Amoco (gray) East Cameron-245, Amoco (red) Eugene Island-215, Amoco (gray) Eugene Island-316, Unocal (yellow) Garden Bank-426, Shell (yellow) Grand Isle-17, Exxon (gray) High Island-46, William H. Kuntz, Inc. (WHK) (gray/orange) High Island-199, Texaco High Island-264, American Natural Resources (ANR) (yellow) High Island-323, Occidental Oil (yellow/white) High Island-334, Unocal (yellow) High Island-467, WHK (gray/orange) High Island-536, Amoco (gray)

Ship Shoal-28, Shell (yellow) South Brazos-70 South Marsh Island-23, Chevron (black) South Marsh Island-49, Unocal (yellow) South Marsh Island-77, Unocal (yellow) South Marsh Island-130, Unocal (vellow) South Marsh Island-131, Unocal (yellow) South Marsh Island-252, Baker Hughes, Inc. (BHI) (gray) South Pass-62, Shell (yellow) Vermilion-39, Unocal (yellow) Vermilion-67, Unocal (yellow) Vermilion-147, Unocal (yellow) Vermilion-201, Unocal (yellow) Vermilion-245, Columbia Oil (yellow) Vermilion-265, Exxon (gray) West Cameron-45, Phillips (yellow) West Cameron-196, Unocal (yellow)

West Cameron-197, Unocal (yellow) West Cameron-202, Unocal (orange) West Cameron-237, Unocal (gray) West Cameron-277, Unocal (orange) West Cameron-280, Unocal (yellow) West Cameron-333, Chevron (gray) West Cameron-405, Coastal Oil (orange) West Cameron-426, drilling rig (yellow) West Cameron-485, Columbia Gulf (yellow) West Cameron-504, Coastal Oil (yellow)

VOLUME 32 NO. 1 (2010), PG.18

West Cameron-536, Unocal (yellow)
West Cameron-593, Unocal (yellow)
West Cameron-620, Marathon Oil (gray/yellow)
West Cameron-648, Oryx Oil (yellow)
West Delta-43
West Delta-40, Amoco (gray)
West Delta-96, Conoco (yellow)
27 33 N, 92 27 W, drilling rig located 160 miles southwest of Morgan City (144 miles south of coastline) and in 2,858 feet of water



Gary aboard WC-280, a UNOCAI gas production platform 72 miles south of Cameron, awaiting arrival of migrating monarchs. T-Shirt with monarch life cycle was worn to help educate crew members with the butterfly's life cycle (October 1991).

An analysis of the pinpoint data from 52 offshore, manmade structures indicates most sightings and the greatest numbers of monarchs occurred in offshore "blocks" labeled as East Cameron, High Island, South Marsh Island,



Crew member ("Pop Thibodeaux") aboard WC-280 with monarch on hard hat (November 1992).

Vermilion, and West Cameron—all immediately below the coastline of southwest Louisiana (Lake Charles and Lafayette are principal metropolitan areas to the north), and to some degree east of northeastern Texas (Beaumont is the closest metropolitan area). This is important since the vast majority of offshore structures occur below the southeastern Louisiana coastline in the parishes of Jefferson, Lafourche, Plaquemines, and St. Bernard—all basically south of New Orleans and within the current Mississippi River Delta. In fact, the only sightings **not** in the



Two monarchs resting on hard hat aboard WC-280 (November 1992).

southwest Louisiana-northeast Texas sector are those from Grand Isle, Ship Shoal, South Pass, Southwest Pass, West Delta, (all in Jefferson, Lafourche, St. Bernard and Plaquemines parishes) and South Brazos off the eastern coast of Brazoria and Matagorda counties in eastern Texas. If the butterflies were simply being blown offshore, I contend that the high helicopter traffic and abundant offshore structures that exist off the southeastern coast of Louisiana would have produced the most sightings and the largest number of individual butterflies.

VOLUME 32 NO. 1 (2010), PG.19





Young crew member aboard WC-280 assisting with the collection of migrating monarchs (above 4 photographs, October 1991).

A second point is that the hard data indicate that most of the monarch sightings—at least 38 out of 52 or 72 percent-- are from structures painted with light colors: principally, yellow but red and white, too.

Most butterflies were observed during the heat of the day, that is, mid to late afternoon. Often they would be in tandem pairs or small groupings, usually 20-40. The butterflies flew 30-130 feet above the warm waters of the Gulf, presumably taking advantage of warm thermal uplift (water temperature in October is usually 77-78 degrees F, often warmer than ambient temperature). Because monarchs are innately programmed for interrupting their wing flapping with periods of gliding, the butterflies make excellent migrants. But if ever an individual set down on the water, which was very infrequent, it was quickly nabbed by a fish. The

vast majority of the migrants held to a south-southwest trajectory—except for vanguards, which moved in a more westerly direction possibly because they had been accidentally blown from shore. But whenever a metal structure was sighted, the butterflies would slow and circle to "check it out." After inspecting, however, the insects usually continued on their prescribed trajectory. Not until dusk and early darkness did butterflies actually land. They selected anything their sharp tarsal claws could grasp: machinery, pipes, chains, wires, ropes, railings, and particularly, the metal fencing around the heliport. The butterflies usually remained until dawn or early morning. But on several occasions, the mass departed during the night in a south-southwest direction. (Night flight is very unusual for butterflies but has been reported as far back as 1899.) While the insects seemed to prefer moving when winds favored gliding, the tenacious migrants were able to hold to their prescribed course even if buffeted by strong head winds.

In summary, then, I theorize that although, I failed to observe a monarch blitz, the sightings indicate that monarchs track a consistent over-water flyway approximately 90-100 miles wide from the southwest coast of Louisiana and eastern Texas, and by extrapolation, to the northeast coast of Tamaulipas, Mexico, approximately 400 miles away. Once onto the Mexican Gulf coast, the butterflies can access a series of passes that dissect the eastern Sierra Madre and the Central Plateau in order to reach their target forests in the central highlands.

[Points of interest: During my visits to WC-280 I observed several other species of butterflies, presumably blown offshore by strong northern winds. These include: little yellow (*Eurema lisa*), cloudless sulphur (*Phoebis*

Gary on lower deck of WC-280 checking water temperature (October 1991).



Don Valentine filming migrating monarchs (October 1991).



Don Valentine preparing to film migrating monarchs (October 1991).

VOLUME 32 NO. 1 (2010), PG.20

sennae), painted lady (Vanessa cardui), red admiral (Vanessa atalanta), and common buckeye (Junonia coenia). Moths include: Carolina sphinx (Manduca sexta), Tersa sphinx (Xylophanes tersa), and thousands of a small white moth (most likely a pest of soybeans). Other insects include: masses of green stink bugs, two leaf-footed bugs, several dragonflies, several crane flies,

many houseflies, several ladybugs, and one lacewing. A good variety of birds often accompanied the passage of a cold front. For example: American bittern, Baltimore oriole, brown pelican, cardinal, cat bird, cattle egret, gannet, house wren, indigo bunting, least flycatcher, Louisiana (tricolored) heron, Louisiana waterthrush, mourning dove, red-eyed vireo, ruby throated hummingbird, scissor-tailed flycatcher, snowy egret, whitecrowned sparrow, white-winged dove, vesper sparrow, yellow-bellied sapsucker, yellow-billed cuckoo, and warblers (American redstart, baybreasted, black-and-white, black-throated green, hooded, magnolia, northern parula, ovenbird, pine, Tennessee, and yellow-throated). In addition, I noted an unidentified tern and hawk.

The crew of WC-280 enjoyed my annual visits. My discourse and antics provided *"live"* entertainment during an otherwise dangerous and lonely job. To illustrate this, I offer the following two anecdotes from my 1991 visit.

First, when the crew learned that I was going to collect monarchs for tagging, several individuals decided to join the act. With lots of construction materials on board, several young and impetuous crewmen co-opted PVC pipe and plastic to fabricate makeshift nets. Then, with youthful daredeviltry they would assume precarious positions on railings to attempt to swoop up a passing butterfly. Often successful, they would present the specimen to me—their faces aglow.

The second instance involves the filming of me tagging a monarch. Don decided on a clear afternoon on an upper deck so that equipment and the Gulf waters could form an unusual background. Most of the crew gathered around since they were convinced that the tags would add too much weight, rendering the butterflies incapable of flying. I tried to assure all that the extra weight was insignificant. But the expressions of the crewmen indicated that they remained skeptical. One crewman even murmured: "We'll see." Unfortunately, Don was filming with only one

camera. In order to get multiple-angled shots, Don had to re-film many maneuvers. This—along with my pontificating about the procedure—took about 40 minutes. All the while, the sun was unrelenting. Finally, when we were ready for the release I went to the edge of the platform. As Don positioned the camera, I described to my attentive audience my final move: I would toss the butterfly up into the air and it would then resume its flight. Then one of the workers quipped: "You mean that butterfly is going to fly to Mexico?" I responded: "Of course, the tag is very light and I have been careful not to damage the wings." Sweaty heads nodded in disbelief; there were even a few giggles. With camera rolling, I tossed.

Oops! Like a vignette from *America's Funniest Home Videos*, the butterfly—like a chunk of lead—plunged straight down to the water 80 feet below. The naysayers scrambled to the railing and peered downward. A foot-long fish hit the surface of the water, gulped the butterfly, and then disappeared into the abyss. And that was that.





Cinematographer Don Valentine (Moody Institute of Science) filming migrating monarchs aboard WC-280 (October 1991).

First migratory monarch filmed as it rested on flood light aboard WC-280 (October 1991).

VOLUME 32 NO. 1 (2010), PG.21

The crew roared! One worker then blurted: "Well, I guess that's one tag you don't have to look for in Mexico." In order to try to retain some modicum of professionalism, I explained that while monarchs are resilient, our "model" had been exposed to the hot sun for so long that it most likely had gotten too stressed. "Let's try again," I stated. So, I tagged another specimen. Then, with camera rolling, I tossed. Thank God. success! However, from that day forward, I was always addressed as "MONARCHZILLA." And during subsequent visits, the first question to me always was: "How many butterflies are you going to kill this time?"

Just how monarchs navigate over the open waters of the Gulf and locate the offshore structures

remains a mystery. Empirical data from my hundreds of hours of observing monarchs flying from my vantage point on an offshore structure suggest that both magnetism and color play key roles. Researchers in the past have proven that certain body parts and sections of wings contain minute quantities of magnetite, an oxide of iron that acts as a biosynthetic compass (many birds, dolphins, rays, sharks, and the migratory locust also possess magnetite). In theory, at least, this can allow such insects to orient to Earth's natural geomagnetism. But because offshore facilities are constructed of massive amounts of iron and house telecommunication and electrical generating equipment, these structures generate substantial electromagnetic fields, too. (It is easy to demonstrate this by observing the deflection in the compass or "*Directional Gyro*" aboard a helicopter as it approaches an offshore structure for landing. Beginning about 0.2 mile out, the compass begins deflecting between seven to ten percent. On deck, the deflection is about twenty percent.) I theorize, therefore, that the insects are fooled by false readings from their intrinsic internal compasses. Furthermore, numerous observations indicate that monarchs have a propensity for the colors yellow and orange, often the palette of their fall nectar plants such as goldenrod (*Solidago*) and sunflowers—particularly narrow-leaved sunflower (*Helianthus angustifolius*) in Louisiana. And so, here again, the monarchs are lured to many offshore structures by bogus "*pit stops*."

But where is the launch site?

Although Louisiana's coastline is virtually a treeless marshland, there are a few geographical places where trees and beaches abut the Gulf: Grand Isle in Jefferson Parish and the cheniers of Cameron Parish. [NOTE: The word chenier is from the French *chênièr*— "*place where oaks grow*." See Ross, 2009a,b]. Both venues consist of dry land elevated a few feet above the surrounding marshlands and Gulf waters. These lands support natural woodlands dominated by live oak (*Quercus virginiana*), hackberry (*Celtis laevigata*), black/honey locust (*Gleditsia triacanthos*), and toothache tree (*Zanthoxylum clava-herculis*). From the air, the topographic features resemble great ships afloat in a sea of grass. Because the Cameron cheniers are laid out in an east-to-west configuration, they present a broad front for staging Gulf crossings. And so, besides monitoring monarchs offshore, I also spent considerable time in Cameron Parish, particularly in the Baton Rouge Audubon Society's "*Peveto Woods Sanctuary*" near Johnson Bayou. There I learned that many monarchs from more northeastern locations arrive at Louisiana's chenier coastline between mid September and early October. At night, the insects take refuge in the boughs of the numerous trees—all in full sight and sound of waves pounding the beach.

During the day the butterflies feed on the luxuriant displays of wildflowers that thrive in the well-drained soils of the ancient beach ridges. Favorites include goldenrod (*Solidago* sp.), saltbush (*Baccharis halimifolia*, and spiny

VOLUME 32 NO. 1 (2010), PG.22



Gary awaiting arrival of first migrating monarchs at dusk aboard WC-280 (October 1991).

aster (*Chloracantha spinosa*). The later attains a height of approximately two feet and bears numerous flowers—white petals with yellow disk. The plant is abundant on the cheniers but recorded from only four coastal parishes within the state. Peak blooming time is in October. The flowers seem especially attractive to monarchs and a small, day-flying wasp moth, the yellow-collared scape moth (*Cisseps fulvicollis*), family Arctiidae, subfamily Ctenuchinae. The moth is black with a pronounced orange-red collar—presumably an aposematic coloration. Could the aster provide phytochemicals such as pyrroliozidine alkaloids (PAs) that are used as toxins by both the moths and monarchs as defense against potential predators?

In an attempt to confirm in 1992 I contacted Ronald B. Kelley in the Department of Chemistry at Moorhead State University in

Moorhead, Minnesota. Dr. Kelley is a natural-product chemist who conducted some of the original research on PAs in overwintering monarchs in Mexico. As instructed, I shipped a considerable quantity of fresh flowers. Unfortunately, however, the analysis was inconclusive, and so the question remains open. However, with such strong circumstantial evidence, I am of the opinion that the spiny aster plant, which is so abundant on the cheniers, provides important chemicals that monarchs use in their arsenal for defense and as such, could provide a selective advantage in those individual monarchs that embark on a trans-Gulf crossing.

During October, the butterflies await the passage of a south-bound cold front. When this occurs, conditions can be wet and blustery. Of course, some individual butterflies are accidentally blown offshore—presumably to their death. But the majority simply honker down. In a day or two, the winds abate. However, breezes remain from the north. In addition, the sky clears, relative humidity drops, and temperatures moderate. These conditions seem to be the cue for the butterflies to launch from their Cajun bivouacs.



Migrating monarch at rest on rope on WC-280 (November 1992).

Now the butterflies take off in mass in a south/southwesterly direction out to sea. Once over open water, the insects' sensitive internal biocompasses become confused as described earlier. After some rest time, they abandon their perches to continue flying south to southwest over the Gulf. Beyond the range and influence of the offshore structures, the insects' compasses are reset to a more westerly direction by the strong magnetic pull of a *bona fide* landmass—Mexico. After another 10-13 hours of non-stop flight over perhaps 300 miles of open water, they again encounter man-made structures off the coastline of Tamaulipas, Mexico. Now close to land, the weary monarchs soon find food, water and trees.

In March and April the trend is reversed. Although most of the northward bound monarchs again travel a land route back to the United States and Canada, some fly eastward toward the Mexican coastline. There they launch out to sea, probably attracted by man-made structures off the coastline line of Tamaulipas. Once past the point of no return, they continue until they encounter structures off the Louisiana coast. Now the man-made sites become even more critical than during fall. While northerly winds act as tailwinds assisting migrants moving southward in the fall, such winds ushered in by late season cold fronts act as negative headwinds for butterflies tracking northward. To intensify matters, spring monarchs are severely emaciated (researchers report that fat accounts for only 37 percent of dry weight in March

whereas in November, the percentage is 73). This low energy coupled with strong headwinds set up a scenario for disaster. Fact is, during several spring seasons, I personally have witnessed large numbers of dead monarchs washed ashore on chenier beaches following frontal passages. [NOTE: Neotropical songbirds streaming northward across the Gulf share similar experiences.] In the end, by playing "hopscotch" between the petroleum industry's structures—and perhaps, a little bit of luck—the travelers make landfall in southwest Louisiana.

VOLUME 32 NO. 1 (2010), PG.23



During mid to late March in both 1991 and 1992 I sat on Holly Beach and Rutherford Beach counting monarchs coming in from the Gulf onto the beach. The butterflies were flying within a hundred feet of the surface and directly from 2 south/southwest direction-in spite of the fact that on several days the prevailing breezes were headwinds from the north. Numbers of individual butterflies ranged from 15-30 every fifteen minutes. Peak hours were 11:00 AM through 4:00 PM.

With an abundance of trees and wildflowers, Louisiana's cheniers must seem like Nirvana for the aged and emaciated migrants. The trees are used as nocturnal

WC-280, a UNOCAL gas production platform 72 miles south of Cameron, LA. Yellow paint of platform seems to attract migrating monarchs. Color resembles common nectar plants used by monarchs in autumn (October 1991).

roosts and for resting during copulation. Mating usually begins after the noon hour and peaks near dusk. Often mating frenzies occur with balls of monarchs plummeting to the ground. Primary nectar sources are southern dewberry (*Rubus trivialis*) and spiny thistle (*Cirsium horidulum*). But here, too, female monarchs find antelope-horn/spider milkweed (*Asclepias viridis*)—the largest concentration of plants in the 1990s was on Monkey Island, just south of the town of Cameron. With this abundant hostplant, females can lay their first eggs, thus jumpstarting the year's first generation, whose adults then travel farther north. By the end of summer—and several generations down the line—the final brood begins the same epic journey undertaken by their predecessors



Monarch silhouetted against moon on Grand Chenier (February 1995).

the previous year. The cycle of life is now complete.

For all that, the final story of the monarch's "Trans-Gulf Express" has yet to be told. Although I am tantalized by the possibility that offshore energy development may have inadvertently sparked the evolution of the flyway, I find that concept difficult to accept-after all, oil exploration in the Gulf of Mexico dates back only about six decades. I think the probable truth is that monarchs-and Neotropical songbirds as well-are simply exploiting the petroleum industry. That said, the role of the offshore structures should not be taken lightly. Because a migration of any kind is undeniably high-risk and energy-expensive, the offshore rest stops make the Gulf crossing less perilous for flyers. Furthermore, Louisiana's coastal cheniers present fall migrants with abundant wildflowers for increasing their fat reserves-and possibly phytochemicals for defense-and trees for shelter. In the spring, the trees and wildflowers are once again important for shelter, food and mating. But at this time there is one crucial addition: host milkweeds enable female monarchs to initiate a new (and perhaps an extra) generation outside of Mexico in advance of their land-based cousins.

So, in summary, here is my theory: The monarch's "*Trans-Gulf Express*" probably initiated in some long-forgotten time by a few aberrant wanderers blown offshore from the coastal cheniers of Cameron Parish in Louisiana. (I like to think of the anomaly literally

and metaphorically as "A Clockwork Orange," the title of the 1971 highly controversial but blockbuster film by Stanley Kubrick featuring a sociopath in futuristic England.) Now, however, the shortcut to and from Mexico is reinforced thanks to the presence and expansion of the petroleum industry in the Gulf of Mexico—particularly off the southwest coast of Louisiana and the eastern coast of Tamaulipas. Through natural selection, the "Express" has become a mix of programmed and learned behavior affecting the safety and economics of the monarch as a species. And from an environmental/political viewpoint, the event is a good example of how the apparent unholy alliance between industry and nature is often only a question of personal aesthetics and opinions.

[UPDATE: Hurricane Rita in 2005 and Hurricane Ike in 2008 ravaged Cameron Parish. Virtually all trees were damaged and most of the land was covered with over 12 feet of salt water for days. Although my post-hurricane surveys have indicated that monarchs still can be found in the spring and fall each year, their numbers are much lower in the past. Furthermore, as of fall 2009, I have failed to find any *Asclepias viridis*. On another note, WC-280 was shut down and removed in the last decade.]

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CROSSING THE PERPLEXING WATERS OF THE DELAWARE BY CRAIG W. MARKS

On September 3, 2007, I was walking a pipeline cut at Thistlethwaite WMA, St. Landry Parish, Louisiana, around midday. September is still summer in south Louisiana so the weather was mostly sunny, hot and muggy. August and September also mean regular rain, primarily in the afternoon, and the vegetation was green and lush in the cut, growing almost to my waist in many places. The ironweed was in full bloom, attracting literally hundreds of skippers, mostly dark ones such as Ocola Skippers (*Panoquina ocola*); Clouded Skippers (*Lerema accius*); and Dukes' Skippers (*Euphyes dukesi*), with the occasional Twin-spotted Skipper (*Loigoria maculata*). Something bright orange caught my eye so I stopped to investigate.

At first I thought it was a Yehl Skipper (*Poanes yehl*), never plentiful but a regular at Thistlethwaite; however the location was wrong. Typically, the Yehls were found in a different area, near cane. Also, this one didn't have any spots on its ventral hindwing so I netted it for further investigation. I saw no other like it the rest of that day even though I started looking specifically for others. In fact, despite multiple and regular trips to Thistlethwaite, I didn't see another one until August of 2009.



Fig. 1. Male Delaware Skipper, dorsal, 8/03/2007, St. Landry Parish, Louisiana.

I was unable to identify the skipper, a male, on my own. Although the ventral side was mostly a bright golden orange, the dorsal side had thick dark borders, with black vein lines and two thick black bars in the forewing (Fig. 1). I circulated photos to some of my more *"skipper knowledgable"* friends, and David Henderson of BEST fame identified it as a Delaware Skipper (*Anatrytone logan*). I agreed but it sure didn't look much like many of the pictures available for reference.

Klots (1951) listed the Delaware Skipper as Atrytone logan. Both he and Scott (1986) identified the subspecies from the east as A. l. logan. No differences were noted between the north and south, and their pictured specimens were not nearly as dark as what I have seen at Thistlethwaite. Scott's map included

Louisiana but the map in Opler and Malikul (1992) excluded the bulk of the state.

Cech and Tudor (2005) report that in the South, *A. logan* is a regular feature of the skipper fauna during warmer months. Its habitat is extremely varied, both dry and wet. They call it a "generalist", "seldom abundant" but a widespread "everyday" species, mostly common with two near-continuous broods from May-June and July-Sept. Recently reclassified from the genus *Atrytone* to the neotropical genus *Anatrytone*, they suggest the existence of evidence to support the hypothesis that this is actually a "species complex, consisting of two or more sibling species."

The move of *logan* from *Atrytone* to *Anatrytone* was presented by Burns in 1994. Essentially, he left *arogos* in the former genus and moved *logan* to the latter. Burns (1994) also made clear that *A. mazai* from extreme south Texas and northern Mexico was not a subspecies of *logan*, but its own species [contradicting Scott (1986) who lists *mazai* as subspecies of *logan*]. Combined, *logan* and *mazai* form a North American subgroup.

Pelham (2008) identified two subspecies, A. l. logan and A. l. lagus. The former was also known as delaware. Its type locality is identified as, "Lansing Michigan ... Philadelphia", with the neotype known from "Kanawha River, Kanawha County, W. VA." The latter's type locality is "western Texas ... southern Colorado ... Nevada ... Oak Creek Canon". Following Burns (1994), he included A. mazai as a separate species within this genus.

Other than my listing for 9/03/07, it has not been listed from Louisiana by The Lepidopterists' Society within the Society's Season Summary. East Baton Rouge Parish is the only parish documented for this bug on the website,

VOLUME 32 NO. 1 (2010), PG.26

Butterflies and Moths of North America. In an unpublished article circa 1971, Gayle Strickland listed it as Atrytone delaware. He indicated it had not been reported from Louisiana previously. His first reported specimen was from July 1968 near a partly drained swamp south of Baton Rouge. Later in that same month, a male was taken in an overgrown pasture a few miles from the first location. Three more were collected from 1968 to 1971 in May, July and September in varied habitats. "Specimens are generally larger and darker than those examined from more northern localities in the U.S." Charles and John Bryson have posted pictures of two individuals from Mississippi at www.insectimages.org. The darker specimen is reported from Cumberland in Webster County, with a date of 6/10/72.



Fig. 2. Slough at Thistlethwaite WMA, St. Landry Parish, Louisiana.



Fig. 3. Slough at Thistlethwaite WMA, St. Landry Parish, Louisiana.

Harris (1972) referenced it as *Atrytone delaware delaware*, a subspecies designation which I assume equates to *A. l. logan*. He reported it as widespread but local in Georgia, generally rare, found at forest edges near small streams, boggy areas, swamps, pond edge bordered by deciduous woods. Harris' female specimen from Stone Mountain (Plate 7, No. 10), is another close reflection of the dark markings found in the south central Louisiana populations I've located. Glassberg, Minno and Calhoun (2000) reported it throughout Florida, found in moist grassy areas including pond and lake margins and sedge and coastal marshes. They called it one of the "most common golden skippers in wetland habitats." It was reported to fly from April to October in west Florida, especially June to September.

On August 16, 2009, I was back in Thistlethwaite looking for habitat that might support a colony of Dion Skippers (*E. dion*) (with a large colony of Dukes' present, I am hopeful Dions are also there). I was aware of a heavily wooded low area where a large quantity of tall grass grew. Typically, the area held so much water that I could only skirt the left or southern margin. The area is not really large enough to be called a swamp, and as it ran in an east-west, linear fashion, I considered it to be more akin to a slough. I wasn't sure what kind of grass was growing in the bottom so I went to investigate.

On this day, the slough was dry and I could walk right out into the middle. Within 100 feet I was in a section of lush, knee to waist high, broad-leafed grass (Figs. 2 and 3) I should again emphasize this area is completely within a hardwood forest. To my left, as I walked down the slough, was a cane thicket. On the far or northern side, palmettos filled the forest floor. Giant

Swallowtails (*Papilio cresphontes*), Southern Pearly-eye (*Enodia portlandia*), Gemmed Satyrs (*Cyllopsis gemma*) and Carolina Satyrs (*Hermeuptychia sosybius*), are common. In the spring, Little Wood Satyrs (*Megisto cymela*) are also common. Question Marks (*Polygonia interrogationis*), Hackberry (*Asterocampa celtis*) and Tawny Emperors (*A. clyton*) were present this particular day.

An orange skipper moved in a sunlit spot of the high grass and came to rest at the top of a tall blade. I had a good look and could see it was not a Dukes' Skipper (which are quite dark dorsally at this location), so I netted it. It was a female. Not far away, also in a sunny spot atop a blade of grass, I caught a male. My initial diagnosis was Delaware Skipper.

With this discovery, I drove over to the pipeline cut described in the first paragraph of this article. Although I

VOLUME 32 NO. 1 (2010), PG.27

found no Delaware Skippers, I did walk further down the cut toward the north and found a small creek with steep banks and the same tall grass. I started into the slough but didn't get very far before confronting an upset water moccasin. I conceded possession of the slough and returned to the cut. My belief is that the male Delaware seen in September, 2007, originated out of this slough and had been drawn into the cut by the ironweed in bloom.



Fig. 4. Male Delaware Skipper, dorsal, 8/30/2009, St. Landry Parish , Louisiana.



Fig. 5. Female Delaware Skipper, dorsal, 8/30/2009, St. Landry Parish, Louisiana.



Fig. 6. Female Delaware Skipper, ventral, 8/30/2009, St. Landry Parish, Louisiana.

I drove to Indian Creek Recreation Area on 8/30/09, again looking for suitable Dion Skipper habitat. The habitat I searched has been described in my article on King's Hairstreaks in Louisiana in the previous newsletter of the Southern Lepidopterists' Society (Vol. 31, No. 4, 2009, pgs. 144-148). In a habitat very similar to that found at Thistlethwaite but with more water, I found a female Delaware sitting on a blade of the same kind of grass.

On the return trip from Indian Creek on 8/30, I stopped at Thistlethwaite to canvas the large slough. This time I saw seven Delawares, five males and two females (Figs. 4-6). The males are much harder to approach, darting off with a swift flight, not always to return. The females have a more fluttery flight, fly lower and seem to only move away a few feet before alighting again on a blade of grass.

Many of the guides I researched simply refer to the host plant as "grasses." The three historical hostplants identified are Big Bluestem (Andropogan gerardi), switchgrass (Panicum virgatum), and Woolly Beard Grass (Erianthus divaricatus) (Scott, 1986). Cech and Tudor (2005) and Glassberg et al., (2000) named Redtop Panicum (P. rigidulum) and maidencane (P. hemitomon) as additional host plants. Big Bluestem, switchgrass, Redtop Panicum and maidencane all grow in Louisiana, and, in particular, in the south-central region of the state (C. Allen et al., 2004).

Dr. Charles M. Allen has written several books on Louisiana's flora including one on the "Grasses of Louisiana" (Allen et al., 2004), and was kind enough to identify the grass at Thistlethwaite and Indian Creek as Panicum gymnocarpon, savannah panicgrass (Fig. This perennial is reported as restricted to the 7). southeastern United States, from coastal North Carolina into South Carolina, southern Georgia, Florida, Alabama, Mississippi, Louisiana, eastern Texas and southern Arkansas. While I've seen no specific identification of savannah panicgrass as a host plant for logan, several authors have suggested other grasses, particularly those that grow in a wet, marsh habitat, probably also serve as a host plant but have not been confirmed (T. Allen, 1997).

I did not actually see any female Delaware Skipper oviposit on the grass in question. My suspicion that it is the larval foodplant is based on several factors. First, other than the first male on ironweed, all others, both



Fig. 7. Savannah panicgrass, Thistlethwaite WMA, St. Landry Parish, Louisiana.

how to dissect the business end of a skipper.

VOLUME 32 NO. 1 (2010), PG.28

male and female, were seen actually perching repeatedly on this grass. Second, particularly at Thistlethwaite, the area where I've found the skipper is dominated by this particular species of panicgrass to the extent that there are no other grasses in the immediate area. In fact, the closest grasses other than this one were up a slope in a hunter's road I've walked numerous times during all times of the season without having once seen Delaware Skippers.

I would note that brief e-mail discussions with Vernon Brou suggest Vernon has experience with this bug in the Florida Parishes of Louisiana. Vernon was kind enough to caution me not to assume *logan* is the correct name. He asked if I had closely inspected the genitalia of my specimen in comparison with specimen from other parts of the country. Unfortunately, I don't have a microscope, much less the knowledge of what and/or

I addressed the question of whether the bug found in Louisiana might be a separate subspecies with Gary Ross. Gary quite correctly noted that to determine whether the Louisiana population represents a separate subspecies or just a geographical variation would take a lot of museum work, work beyond my capabilities. Louisiana specimens would have to be compared with those from other localities. It is possible the dark form in Louisiana represents a cline or transition with other lighter forms elsewhere. To be a separate subspecies would require that the Louisiana population be sufficiently isolated from other populations; otherwise, the "different coloring is just a geographic variation."

I realized as I prepared this article that I was asking more questions than I had answered. As Jeff Trahan so succinctly noted to me, I've reported finding a skipper in an area not previously reported but not unexpected. It may actually be different from *A. l. logan* but I'm not sure. It might be a new subspecies of *logan*, but, then again, it may just a geographic variation. I think it is feeding on a previously unreported type of panicgrass but I can't prove it yet. Oh well, other than one angry snake, the search was fun.

Acknowledgement: I wish to thank both Gary N. Ross and Jeff Trahan for their help and guidance in the preparation of this article. Both helped edit the article down to its final version, and I would be remiss if I did not give them credit for their assistance.

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VOLUME 32 NO. 1 (2010), PG.29

THEONA CHECKERSPOT (THESSALIA THEONA) LIFE HISTORY

BY

BERRY NALL



Theona Checkerspot ovipositing, October 20, 2009

One evening in October, 2009, I was fortunate to observe the female in the first picture fly to a small Purple Sage, *Leucophyllum frutescens*. She disappeared into the plant, but I soon found her crawling around near the base. I wasn't sure whether she was ovipositing, so I took a few pictures to record both the female and the location. The next day I returned and found the eggs.

The caterpillars emerged after only four days. They went through a series of color transformations as they matured: green-yellow to white to black-spotted silver to the mature silver-spotted black. The heads did not turn red until the last or second-to-last instar.

I returned most of the caterpillars to host plants after a few days.

The first caterpillar to pupate did so 20 days after it emerged from the egg; it emerged from the chrysalis six days later. The rest of the caterpillars followed a day or two later. The journey from egg to adult took 30 to 32 days.



Eggs, October 21, 2009



Eggs about to eclose, October 23, 2009



Caterpillars have just emerged, October 24, 2009



October 26, 2009

October 29, 2009



November 1, 2009

November 1, 2009



Caterpillar turns brown when about to shed skin, November 8, 2009



November 10, 2009



Chrysalis, November 13, 2009



Butterfly ready to eclose, November 21, 2009



Mature caterpillar, November 12, 2009



Fresh Theona Checkerspot, November 21, 2009



Falcon Heights, TX, August 13, 2008



Falcon Heights, TX, October 24, 2008

Acknowledgement

The Southern Lepidopterists Society thanks Mr. Berry Nall for allowing us to publish his article on the Life History of the Theona Checkerspot which appeared on his home page website <<u>http://leps.thenalls.net/index/php></u> on January 3, 2010.

VOLUME 32 NO. 1 (2010), PG.31

DUSKY - BLUE GROUNDSTREAK [*CALYCOPIS ISOBEON* (BUTLER & H. DRUCE, 1872)] *VERSUS* RED - BANDED HAIRSTREAK [*CALYCOPIS CECROPS* (FABRICIUS, 1793)] BY J. BARRY LOMBARDINI

C. isobeon (17-VII-2008), dorsal.



C. isobeon (20-IX-2008), dorsal.



C. isobeon (17-VII-2008), ventral.



C. isobeon (20-IX-2008), ventral.

The two specimens of *Calycopis isobeon* (a-d), the Dusky-blue Groundstreak, were collected in Dickens County Springs Park near the city of Dickens, Texas. Both specimens were nectaring on a flowering abelia shrub [probably Glossy Abelia (*Abelia grandiflora*)].

The distinguishing features between *C. isobeon* (a-d) and *C. cecrops* (e, f) (Red-banded Hairstreak), are geography and physical description. *C. isobeon* is located in Texas and Mexico with strays occasionally to Kansas. *C. cecrops* flies in "southeastern United States from Long Island south through Florida, west through entire area to southeast Kansas, eastern Oklahoma, and eastern Texas. Strays to eastern Nebraska, northern Illinois, and Michigan".¹

Distinguishing physical features for *C. isobeon* are normally a thin red-orange band on the ventral forewing (b). However, this is not seen in photograph (d) where this red-orange band is "*wide*". Also on the ventral hindwing (b, d) of *C. isobeon* the eyespot between the two tails (largest spot on ventral hindwing) is typically more red-orange than black or at least equal amounts of red-orange and black.²

For the specimen of C. *cecrops*, the Red-banded Hairstreak, which was captured in Sarasota, FL, opposite features are present, *i.e.*, there is a broad red-orange band on the ventral forewing (f). In addition the large eyespot on the ventral hindwing (f) has more black than red-orange.

Thus, are there any comments from the SLS membership as to what is going on here as to the somewhat unusual

VOLUME 32 NO. 1 (2010), PG.32



C. cecrops (28-IV-1986), dorsal.



C. cecrops (28-IV-1986), ventral.

phenotype of this specimen (**c**, **d**)? Is this specimen of interest or is it just minor variation and nothing unusual? Some old posting by Ro Waurer and Harry Pavulaan on the Web back in December of 2001 and January of 2002 suggest that *C. isobeon* and *C. cecrops* may or may not hybridize.³ Ro stated that he had a hybrid identified by R. Robbins while Harry suggested that it may be a "*clinal intermediate between the two species but it is probably not a hybrid in the classic sense*".

Sources

1. Website: Butterflies and Moths of North America: http://www.butterfliesandmoths.org/species?l=1570

- 2. Website: Butterflies and Moths of North America: http://www.butterfliesandmoths.org/species?l=1571
- 3. http://www.nababis.org/servlets/Sightings?actionid=264&messageid=405&discsubjectid=65

ERIC AND PAT METZLER VISIT VERNON AND CHARLOTTE BROU



December 14, 2009 (left to right): Eric H. Metzler, Pat Metzler, and Charlotte Brou.

Eric Metzler was born and reared in Michigan. He started studying insects when he was knee high to a grasshopper, and he never stopped. Eric attended Michigan State University where he received a BS in Parks and Recreation Resources and a minor in Entomology. Eric's goal was to be a park naturalist. He thoroughly enjoyed his career with the Ohio Department of Natural Resources and retired from the position of Acting Chief of the Division of Watercraft. When Eric retired he was named Ambassador of Natural Resources by Ohio's Governor George Voinovich. After retirement Eric intensified his study of butterflies and moths, and in October 2005, he was inducted into the Ohio Natural Resources Hall of Fame for his efforts promoting insects as a natural resource. Eric published 41 scientific papers on Lepidoptera, and he described 9 species of moths new to science.

Eric is now undertaking a long term study of the moths of Carlsbad Caverns National Park, a long term study of the moths of White Sands National Monument, and similar study of the moths at Oliver Lee Memorial State Park. Although the studies are in their infancies, Eric already discovered several species of moths, new to science, in these three public parks.

Eric co-founded The Ohio Lepidopterists, and edited its bulletin for 24 years. Eric just finished two more books on moths - a color guide to the Saturniidae of Ohio and a monograph on the Zygaenoidea of Ohio.

VOLUME 32 NO. 1 (2010), PG.33

ACRONICTA AMERICANA (HARRIS, 1841) (LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA BY

VERNON ANTOINE BROU JR.





Fig. 2. Adult A. americana captured at sec.24T6SR12E, 4.2 mi NE of Abita Springs, Louisiana. n = 711.

The large noctuid species *Acronicta americana* (Harris) (Figs. 1 and 4) is a quite common species across the state of Louisiana. Surprisingly, this common species was not reported by Chapin and Callahan (1967) in the only list of Noctuidae published for the state.



Fig. 3. Parish records for A. americana.

Smith and Dyar (1898) listed the range of *americana* to be Canada to Texas, west to Salt Lake City (Utah), New York, Washington D.C., New Hampshire, Pennsylvania, and Texas. These authors provided detailed descriptions of the larval stages, cocoon, pupae, and listed the foodplants to include: maple, elm, chestnut, linden poplar, birch, alder, oak, hickory, ash, and sycamore.

Covell (1984) listed the range of *americana* to include all of eastern North America, and on the wing from April to September in two or more broods. Covell listed the same foodplants as those stated by Smith and Dyar, but added poplar, walnut, and willow.

Dates of capture within Louisiana indicate there are five annual broods, the initial brood peaking second week of April and subsequent broods peaking at about 34-day intervals (Fig. 2). The fifth brood is consistently year after year the largest populated, accounting for approximately 75% of the total annual population

VOLUME 32 NO. 1 (2010), PG.34



Fig. 4. Adult A. americana resting

in crevice on bark of pine tree.

captured in this study. A similar scenario occurs with *Acronicta lobeliae* Guenée, which also has six annual broods in Louisiana, but the first annual brood accounts for the majority of the total annual population (Brou, in prep).

Heppner (2003) listed the range of *americana* to include eastern North America: Nova Scotia to Florida and Manitoba to Texas, with dates February through May. Heppner provided a list of 25 foodplants for *americana*.

The parish records within Louisiana are illustrated in Fig.3.

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SLS GRANTED PUBLIC CHARITY STATUS

On February 5, 2010, the Internal Revenue Service granted The Southern Lepidopterists' Society "Public Charity" status 170 (b) (1) (vi) under section 501(c) (3) of the Internal Revenue Code. Having received this ruling we will now apply for tax exempt status with the State of Texas where our newsletter is published in order to eliminate the state tax levied on the publication fees. The other bonus will be for our members who donate or contribute money in excess of the annual \$15.00 fee for students or \$20.00 for regular members. Any amount in excess of the membership fee is tax deductible as a charitable contribution under section 170 of the code subject to any present or future IRS laws. Since the effective date of exemption is November 18, 1978, you may want to consult your tax advisor if you plan to claim an exemption for prior tax years. Individuals are advised to keep canceled checks for a record of their contributions. Please request a confirmation letter from the organization for annual contributions in excess of \$250.00.

Joe Riddlebarger

[The SL Society thanks Joe for all his hard work in acquiring this "Public Charity" status. The Editor.]

JAMES ADAMS - PHOTOGRAPHS FROM CALIFORNIA





Argentostiria koebelei

Triocnemis saporis

The following photographs are from a March 2008 trip I took to California. All pictures are from around the Lone Pine area in Inyo Co.

The *Triocnemis saporis* is a common but cool western noctuid, and the *Argentostiria koebelei* is just great looking (and common in western Nevada/eastern California).

PHRYGIONIS PRIVIGNARIA GUENÉE 1857 (LEPIDOPTERA: GEOMETRIDAE) IN LOUISIANA BY

VERNON ANTOINE BROU JR.



Fig. 1. 9 Phrygionis privignaria.

On December 12, 2009, I captured a most surprising new for Louisiana geometrid moth *Phrygionis privignaria* Guenée (Fig. 1). It rained much of the daylight hours and that entire night, and continuously for weeks prior to this particular night.

This mignonette-colored specimen was the thirteenth new for Louisiana lepidoptera species recorded during 2009 utilizing ultraviolet light traps. What makes this statement noteworthy is the fact that 2009 was the 27th continuous year of light trapping at this same location using five to eight ultraviolet light traps. Certainly, these thirteen new state records make a compelling case for continuing to perform long term faunal surveys even at a single well sampled site, and regardless of the weather conditions. During these 27 years, approximately 700,000 light trap hours were expended. Besides light traps, various other trap types were also

operated on a partial or continuous basis at this same ten acre location in Louisiana near to the Mississippi border: sec.24T6SR12E, 4.2 mi. NE of Abita Springs (*aka* Abita Springs study site) (Fig. 2). These other traps, often totaled more than 80-100 units operating yearly, and some had attached anomalous and uniquely designed collection chambers. These included: fermenting fruit bait traps, malaise traps, pitfall traps, bucket and pan traps, and pheromone bucket traps, *etc.* But these will not be addressed further in this article, and are delineated here only so the reader can appreciate the ineffable amount of continuous and intense sampling for 27 years at precisely the same exact location, and new state records of lepidoptera species captures are still appearing at a rate of one per month.

P. privignaria was not included in the checklist by Ferguson, in Hodges, *et al.* (1983). *P. privignaria* was captured twice in the United States previously, both records are from Texas. Apparently the first U.S. specimen, sex unknown, was captured at Lake Brownwood State Park, Brown County, Texas, on October 15, 1965 by Andre Blanchard. Geographically, this location is somewhat centered in the middle of the state, see Fig. 4. That specimen is now in the U.S. National Museum and was never reported by Blanchard in the literature. Bordelon & Knudson (2000) reported on Blanchard's specimen in the News of the Lepidopterists Society.



Fig. 2. Louisiana parish record for *Phrygionis privignaria*.

The second Texas specimen of *privignaria* was captured 28 years later nearer to the east Texas border approaching Louisiana by Charles Ely at Nacogdoches, Nacogdoches County, Texas, on July 12, 1993. Charles Bordelon and Edward Knudson kindly provided an image of that male specimen (Fig. 3), which also was illustrated and reported on by Bordelon and Knudson (2000). The County records for *privignaria* in Texas are illustrated in Fig. 4. Knudson and Bordelon (1999) listed *privignaria* in their checklist.

A remarkable study undertaken by Scoble (1994) revised two genera of neotropical Geometridae: *Phrygionis* Hübner and *Pityeja* Walker, both of which belong to the tribe Palyadini of the subfamily Ennominae containing six described genera. Most of the members of these two genera are species with bold and colorful, metallic wing markings. Numerous taxonomic changes were made in this work

based on the study of primary types and other material. Fifteen species are recognized in Scoble's study, 13 in *Phrygionis* and two in *Pityeja*, of which four in *Phrygionis* are described as new; specific and subspecific names

for 19 species-groups refer to valid taxa. Twenty-four species-group names were synonymized, 19 in *Phrygionis* and five in *Pityeja*, and five were recombined with different genera, four with *Phrygionis* and one with *Pityeja*. Three generic names were synonymized, one in *Phrygionis* and two in *Pityeja*.

Scoble (1994) stated *Phrygionis* is a genus widely distributed in tropical America, species occurring from Florida, through Central and tropical South America, the Bahamas, and Greater and Lesser Antilles. Regarding *privignaria*, Holotype male: Martinique (type lost), Scoble examined 248 specimens of this species from: Texas (the one Blanchard specimen), Mexico, Guatemala, Belize, Honduras, Costa Rica, Panama, Venezuela, Guyana, Surinam, French Guiana, and Bolivia.





Fig. 3. ♂ Phrygionis privignaria captured at Nacogdoches, Nacogdoches County, Texas, on July 12, 1993.

Fig. 4. Texas County records for *Phrygionis privignaria*.

I had originally intended only to address *Phrygionis privignaria*, but I will use this venue to address the other species names in the genus *Phrygionis* listed by Scoble (1994, 1995, 1999) for U.S. locations, with specific discussion related to Florida, where the only presently known other US records exist for this genus. Ferguson, in Hodges *et al.* (1983) listed only one species of *Phrygionis* as occurring in America, north of Mexico, namely, *Phrygionis argentata* (Drury, 1773) and Covell (1984) listed it from central to southern Florida, and tropics.

Phrygionis paradoxata paradoxata Guenée, [1858]

Among seven species and subspecies names synonymized by Scoble (1994), is *Phrygionis argentistriata* Strecker, 1876, described from Florida, USA [type in Field Museum, Chicago, and was also cited as a synonym of *Phrygionis argentata* (Drury) by Ferguson in Hodges *et al.*, 1983:93].

Scoble's 1994 species revision listed the species *Phrygionis incolorata paradoxata* (Guenée, 1857) to be the proper name for the species occurring in southern Florida, the Bahamas, Cuba, Jamaica, Hispaniola, Dominican Republic, and Dominica. Scoble (1994) examined more than two dozen specimens from these locations in his revision.

The nomenclature *Phrygionis incolorata paradoxata* (Guenée, 1857) changed for this species without explanation when (Scoble, 1995) simply listed the known species of *Phrygionis* in his revision of the tribe Palyadini. In the catalogue, *Geometrid Moths of the World* (1999), Scoble changed and expounded on the status of several names in the genus *Phrygionis*, elevating *paradoxata* Guenée, [1858], to species status while demoting *incolorata* to subspecies status.

Scoble (1999) assigned the species occurring in Florida, originally described as *argentistriata* Strecker, 1876, as one of six described species, he now synonymized under the name *Phrygionis paradoxata paradoxata* Guenée, [1858]. This is the proper name for the species occurring in Florida.

Heppner (2003) reported dates for *paradoxata* Guenée January through December under the name *argentata* (Drury).

Phrygionis argentata (Drury, 1773)

Scoble (1994) designated a Lectotype for this species from Drury's illustration as coming from Jamaica. Scoble (1994) listed four species synonymized under *argentata*, and listed the distribution of this species as

Jamaica, Puerto Rico, and St. Thomas (USA, Virgin Islands). This species is not listed by Scoble to occur in Florida.



Fig. 5. Images of two *Ardisia crenata* plants at the Abita Springs study site.

Phrygionis auriferaria Hulst, 1887,

Holotype: USA, Florida in CMNH, Pittsburg. Type illustrated by Holland (1903) pl. 45, Fig. 36. The distribution of *auriferaria* is USA: Florida and Bahamas: Abaco Island. This species is listed for Florida by Heppner (2003) under the name *Palyas auriferaria* (Hulst, 1887), with dates in all months except October.

Scoble (1994) stated "the character by which the tribe (Palyadini) may be defined as a monophyletic group, and by which its members may be recognized as belonging to it, is that the fore-(wings) and hindwings are not coupled by a frenulum and retinaculum system; instead, coupling is effected by an expansion of the humeral lobe of the hindwing." Scoble (1994) stated "in a few cases, species exhibit considerable, non-geographical, variation in color pattern. Such variation is not regarded as being subspecific."

Regarding *P. paradoxata paradoxata* in Florida, C. Covell (per. comm.) stated this species exhibits quite a bit of individual variation, including the antemedial line, and in the spots of the hind wing at the bend in the outer margin, which can be nearly non-existent to fairly large in size. He further states regarding the two *P. privignaria* specimens illustrated in this article, none of our Florida series of *paradoxata* display the straight (or even slightly concave outwardly) antemedial line of the Louisiana and Texas specimens (Fig. 1, and 3), a good feature to use in distinguishing the identity of these two species.

The only literature records for larval foodplants for any described *Phrygionis* species is that referenced for *Phrygionis paradoxata paradoxata* Guenée, [1858], under the name *P. argentata* (Drury) by Kimball (1965) as *Ardisia escallonoides* Schiede & Deppe *ex* Schltdl. & Cham., introduced long past to Florida for ornamental purposes. *Ardisia* is a genus in the family Myrsinaceae – marlberry. According to the USDA, there are three other species of *Ardisia* listed as occurring in the state of Florida: *Ardisia elliptica* Thunb., *Ardisia humilis* Vahl, and *Ardisia crenata* Sims.

No species of *Ardisia* are listed by the USDA for the state of Texas nor any other states in the US, except for Florida and Louisiana. No member of the family Myrsinaceae or the genus *Ardisia* was listed by Correll & Johnston (1970) for the state of Texas. Singhurst *et al.* (1997) reported *Ardisia crenata* as new to Texas flora and dominating understories. Others have also reported *crenata* in southeast Texas, north of Beaumont. It has become a serious understory invasive plant dominating old growth forest. Efforts to eradicate it have failed as the waxy leaf is almost impervious to herbicide. It is reputed to be displacing many of the native, herbaceous plants. *A. crenata* has recently been reported for

Brooks County, Georgia, by the University of Georgia Center for Invasive Species and Ecosystem Health.

A. crenata Sims, (Fig. 5), common names "hen's eyes, Christmas berry", is listed by Thomas and Allen (1997) to occur in Louisiana in five parishes: Rapides, Lafayette, Iberia, East Baton Rouge, and Terrebonne. I can confirm that crenata also occurs at the Abita Springs study site in St. Tammany Parish. I have found this low plant only in understory areas nearly completely shaded from direct sunlight the entire day. In fact, I have tried numerous times to move 12"-16" plants into sunlit areas and they begin to do well in the spring, but as the sunlight increases

VOLUME 32 NO. 1 (2010), PG.38

in intensity and duration, the plants do not flourish and those that do not die appear near death. Both leaves and bright red berries survived several days of 16°F temperatures without any noticeable detrimental effects weeks prior to the specimens in Fig. 5 being photographed on 1-27-2010.



Fig. 6. ♂ and ♀ Phrygionis paradoxata paradoxata Guenée, (Florida).



Fig. 7. ♂ and ♀ Phrygionis auriferaria Hulst, (Florida).

Ardisia crenata is an evergreen subshrub and seeds are retained year-round on plants and dispersed b y mockingbirds, cedar waxwings, raccoons, and opossums. This plant is native from Japan to India, growing to six feet in height, more commonly around one foot in height, occurring in multistemmed clumps. Like Ardisia escallonoides in Florida, A. crenata was also introduced to Florida about the same time.

The Louisiana specimen of *privignaria* was in relatively good condition and one could speculate *Ardisia crenata* would be the number one candidate as the larval foodplant.

Specimens of *crenata* exist in the Louisiana State Herbarium for two other southern coastal Louisiana locations: Vermilion Parish and Iberia Parish.

Scoble (1995), followed his earlier work with a revision of the entire tribe Palyadini at the generic level. This included 115 described species in geographical areas from Florida to Argentina, and includes a new genus *Ophthalmoblysis* among the six genera covered. Brown *et al.*, (1991) described one new species of *Phrygionis* from Cocos Island, Costa Rica, which was covered in Scoble's 1994 revision.

Bob Belmont provided male and female images of the two species occurring in peninsular Florida (Fig. 6, 7). Adults of these species may be viewed at Bob Belmont's Geometridae of North America at the following link: http://mothphotographersgroup.msstate.edu/BobBelmont/450/BelmontIntro.shtml.

M. Scoble confirms (per. comm.) the specimen in Fig.1 is *P. privignaria*. He further remarks *privignaria* cannot be distinguished reliably on external features from *P. paradoxata incolorata*, although the male genitalia are distinctive. However, it is unlikely that this female specimen in Fig.1 could be anything but *privignaria*, given the ranges of the two. Scoble states an error was made in his 1994 species revision, by incorrectly listing the name *incolorata* Prout, 1910, as senior to *paradoxata* Guenée, 1857. He further mentions correcting the error in his 1995 review of the genera of the tribe Palyadini and apologizes for the confusion caused. Both of those unexplained issues were exposed earlier in this article, and his comments provide us closure on those points.

Acknowledgements

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DEFINITIONS:

Aposematic – serving to warn off potential attackers, as the coloration of some poisonous animals. The use of bright coloration to warn that an organism is dangerous or unpalatable.

Introgression – the passing of genes from the gene pool of one species into that of another.

- *Irrorate* a biological entity (animal, insect, *etc.*) that has small marks of color; speckled with contrasting color.
- Mignonette a pale or dull yellowish green or greenish yellow; grey-green color.
- **Papilionaceous** to fly, flutter, swim; shaped like a butterfly usually in reference to certain flowers such as legumes (the pea).
- Papiliochrome Yellow pigments isolated and identified from Papilio xuthus (common swallowtail in Japan).

VOLUME 32 NO. 1 (2010), PG.40

"FRANGIPANI WORM" PSEUDOSPHINX TETRIO (LINNAEUS, 1771) REACHES TAMPA BAY BY

DON STILLWAUGH



Fig. 1. Caterpillar of the Sphingid *Pseudosphinx tetrio* (photograph by G. L. Heinrich)

The caterpillar of the Sphingid *Pseudosphinx tetrio* (Linnaeus, 1771) is a striking creature (Fig. 1). In terms of size, aposomatic coloration and voracity, it has few rivals. The species is reportedly widespread throughout the American tropics and subtropics and sporadically occurs in southern Florida (Santiago-Blay, 1985). Recent discoveries in the Tampa Bay region are believed to be northernmost records for the state.

The adult of the species, known as the Tetrio Sphinx or Giant Gray Sphinx, is also an impressively large creature with a wingspan up to 14 cm (Dunford & Barbara, 2005). The forewing (FW) is gray and white and the hindwing (HW) is largely brownish. Males show a darker FW groundcolor with more prominent maculations (Fig. 3). Females are slightly larger, showing a lighter FW groundcolor with more reduced maculations (Fig. 4). The robust



Fig. 2. Distribution map for *P. tetrio* University of Florida's Featured Creatures Website) (Dunford & Barbara, 2005)

abdomen is dark with grayish rings and is tapered (Tuttle, 2007).

The most current distribution map for the species is Fig. 2 from the University of Florida's Featured Creatures Website (Dunford & Barbara, 2005). Spanning seven counties, records included are from specimens housed at the Florida State Collection of Arthropods as well as publications by several authors. This source notes that stray adults have been found as far north as Nebraska, Pennsylvania and Connecticut. Vernon Brou includes the species in his publication on Sphingids of Louisiana (Brou, Jr. & Brou, 1997). Now in his 40th consecutive year of light trapping 364-365 days/year in Louisiana, he has taken only two adult specimens (pers. comm.).



Fig. 3. *P. tetrio* (male) (photograph by V.A. Brou Jr.)

Fig. 4. *P. tetrio* (female) (photograph by V.A. Brou Jr.)

On November 20, 2009, a 15-cm larva was discovered by a resident of Pinellas County, Florida. Rather than dispatching it as a landscape pest, he brought it to Boyd Hill Nature Preserve in St. Petersburg for identification. Naturalists Candy Arnold and George Heinrich made the identification and forwarded an image to the author. Having new-found knowledge of the host plant, Candy quickly located several caterpillars in a neighbor's yard in southern Pinellas County. They were feeding on the leaves of 6 - 8 ft Frangipani trees (Plumeria sp.) which had been established for 2 to 3 years.

The cylindrical caterpillar is black with bright yellow bands. The head and

VOLUME 32 NO. 1 (2010), PG.41



Fig. 6. *P. tetrio* (prothoracic shield, prolegs, *"button"* on the eighth abdominal segment and anal plate are yellowish orange and speckled with black dots) (photograph by G.L. Heinrich)



Fig. 7. *P. tetrio* (caudal horn is black and relatively long) (photograph by G.L. Heinrich)

thoracic legs are reddish-orange (Fig. 5). The prothoracic shield, prolegs, "button" on the eighth abdominal segment and anal plate are yellowish orange and speckled with black dots (Fig. 6). The caudal horn is black and relatively long (Fig. 7). Morphometric data on various life stages appear in Santiago-Blay (1985). The coloration of the larva in conjunction with the white, toxic latex of the hostplants (various Apocynaceae) strongly suggests aposomatism. The large larvae, often feeding in groups, are voracious (personal observation in St. John, USVI).

Frangipani trees (*Plumeria* spp.) are among the larvae's typical hosts (*e.g.*, Dunford & Barbara, 2005). The beautiful flowers are strung together to create Hawaiian leis. A quick internet search reveals the spread of *Plumeria* as an ornamental. The Plumeria Society of America, Inc. (established in 1979), promotes the appreciation of these plants. This horticultural organization holds plant sales and meetings and acts as

an International Registry of named cultivars.

Internet research of the host plant also turned up a nursery in Seffner (Hillsborough Co., FL) near the city of Tampa. The Exotic Plumeria sells over 200 cultivars. According to an employee, the caterpillars periodically show up in the groves (and are, presumably, dealt with severely). The trees have a "33 degree (F) cold tolerance" and must be protected during cold snaps. At these



Fig. 5. *P. tetrio* (head and thoracic legs are reddishorange) (photograph by G.L. Heinrich)

latitudes *Plumeria* drop their leaves and go dormant. Adults have been taken in Florida from March through September (Hodges, 1971). It is unknown whether the

larvae can overwinter. With the increasing inclusion of *Plumeria* in residential landscapes throughout subtropical regions of the US, it is not surprising that *Pseudosphinx tetrio* was finally recorded in the Tampa area. According to Tuttle (2007), breeding populations occur on the east coast of Florida as far north as Palm Beach County and on the west coast as far north as Sarasota County. Presumably, temperature moderation along the coasts allows for expansion of the range from the south Florida foothold. In all likelihood, populations in the Tampa Bay region are ephemeral, especially after the past winter during which we experienced multiple extended cold spells.

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CYANOPHRYS GOODSONI (CLENCH, 1946) (LEPIDOPTERA: LYCANENIDAE): A FIRST ENCOUNTER BY MIKE RICKARD

There once was a wonderful stretch of road in Santa Ana NWR, on the US-Mexico border in Texas' Lower Rio Grande Valley. It ran for perhaps a mile, starting at the honorary fee station just past the manager's residence, and was the most tropical-looking part of the refuge - lush, lined with Soapberry, Anaqua, and Cedar Elm, with a small irrigation ditch along one side. Of course, the road still exists, as part of what is now called the Wildlife Drive. However, ravaged by years of frequent drought, the ending of flooding (and irrigation) due to upstream dams, and damage by the invasive Guineagrass (*Panicum maximum* Jacq.), the road is now a drying shell of its former self.



Cyanophrys goodsoni adult, June 1975, Bentsen-Rio Grande Valley SP



Cyanophrys goodsoni final instar larva

Late in the afternoon of 13 October, 1968, I was walking back up this bit of road toward the car with my friend and mentor, the late Roy Kendall. Roy saw a hairstreak land on a sunlit leaf and nabbed it. Removing it from his net, he said, "It's just a miserabilis (Cyanophrys miserabilis Clench, 1946), a rag with the tails missing", and prepared to toss it. I said, "Wait! I'll take it", since I was new to collecting the LRGV and had few miserabilis. Upon returning to my home some 150 miles north of Santa Ana, I took a close look at the specimen and realized with a thrill that the tails weren't missing - they were never there in the first place! Had it not been for a recent article (Clench, 1966) illustrating goodsoni, known in the US from only one specimen, I might not have realized the true identity of Roy's catch. I returned the specimen to Kendall in San Antonio the next day, and he agreed with the determination.

The following weekend found me back in the same spot in Santa Ana, in late afternoon, watching a silvery-blue hairstreak endlessly patrolling a patch of sunlight, until finally I lost patience waiting for it to land and wingshot it for my first goodsoni! In time, Roy Kendall discovered the hostplant to be Pigeonberry (Rivina humilis L.), common in the shaded woods bordering the road, and we were able to rear adults from collected eggs and larvae. I found goodsoni consistently at Santa Ana for the next few years, and as my collecting sites expanded, at other locations in southern Hidalgo County. Always, the males seemed to prefer sunlit areas of wooded trails and clearings, while the females were found in

open woods near the hostplant. In 1975, I found it common on several visits to Bentsen-Rio Grande valley SP, but after that year, *goodsoni* vanishes forever from my field notes and life. There are apparently few modern records, generally solitary individuals, and some reared examples from Santa Ana in the 1990's. Despite the extensive spread of Guineagrass, which chokes out low-growing herbs, *Rivina humilis* remains a common plant, and is found in most of the butterfly gardens of the LRGV. *Goodsoni* is thus one of a number of South Texas butterfly

species whose disappearance, after several years of breeding residence, appears related to factors other than hostplant availability.

On a day in August, 1970, I stood at the head of that stretch of road in Santa Ana, staring at the late afternoon sunlight filled with the glittering blue stars of perhaps fifty *goodsoni*. It remains one of the most stunning images of my forty years in the field.

Literature Cited

Clench, H., 1966. The Synonymy and Systematic Position of Some Texas Lycaenidae. Jour. Lepid. Soc. 20 (2) p. 65-70.

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

REPORTS OF STATE COORDINATORS

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

Charlie sends in the following report:

<u>Note:</u> Although the family name Arctiidae has been relegated to the status of a subfamily of the Noctuidae in recent treatments by specialists in the Noctuoidea, I am retaining its usage as a matter of uniformity and stability relative to past reports. CVC

Rick Gillmore reported that a friend, Derek Korab, found a dead *Eumorpha labruscae* (Sphingidae), in a swimming pool in Goldenrod Seminole Co., Nov. 22, 2009. Rick and Terry Moore visited a spot in Volusia County near the fairgrounds east of Deland on March 6 and recorded *Nathalis iole, Calycopis cecrops* and *Junonia coenia*.

Jean Vejoy reports the following from her home in Arcadia, Desoto Co.:

COLEOPHORIDAE:

Homaledra heptathalama, Feb. 6 Homaledra sabalella, Dec. 1, Jan. 18, Feb. 9

GELECHIIDAE: Arogalea cristifasciella, Jan. 18

TORTRICIDAE:

Eumaroza malachitana, Feb. 2 Clepsis peritana, Feb. 2, Platynota rostrana, Feb. 6 Platynota exasperatana, Jan. 18

CRAMBIDAE:

Eudonia strigalis, Jan. 18, Feb. 2 Pyrausta onythesalis, Dec. 9 Sameodes albiguttalis, Dec. 2 Ategumia ebulealis, Jan. 23 Desmia funeralis, Dec. 17 Blepharomastix rehamalis, Dec. 10 Syngamia florella, Dec. 10 Parachma ochracealis, Jan. 23 Diatraea lisetta, Jan. 23 Dolichomia binodulalis, Dec. 2 Argyria lacteella, Feb. 6 Vaxi critica, Jan. 18 Urola nivalis Jan. 2, 18, 23, Feb. 2

GEOMETRIDAE:

Iridopsis defectaria, Jan. 18 Nemoria lixaria, Dec. 26, Feb. 9 Synchlora frondaria, Jan. 23 Scopula aemulata, Jan. 23, 29 Lophosis labeculata, Jan. 2, 18

SATURNIIDAE:

Automeris io, Jan. 22, 31

<u>NOTODONTIDAE:</u> Heterocampa sp., Jan. 18 Heterocampa guttivatta, Jan. 2

ARCTIIDAE:

Cisthene striata, Dec. 17, Jan. 18, Feb. 2

Hypanthria cunea, Jan. 2, 18 (mating), 23

LYMANTRIIDAE: Dasychira sp., Jan. 2

NOCTUIDAE:

Nigetia formosalis, Jan. 2, 23, Feb. 2 Hemeroplanis scopulepes, Jan. 19

Charlie Covell recorded the following in Gainesville, Alachua Co., FL, since the last report:

Hylephila phyleus, Dec. 24
Panoquina ocola, Dec. 24
Papilio troilus, Jan. 22
Phoebis sennae, Dec. 8, 15, Dec. 24, Jan. 20, 22
Eurema lisa, Dec. 8
Eurema nicippe, Dec. 8
Atlides halesus (on sweet almond bush blossoms), Dec. 8
Heliconius charithonia, Dec. 8, 15, 22
Agraulis vanillae, Dec. 8, 13, 15, 22, 24

Danaus plexippus, Dec. 15

ARCTIIDAE:

Syntomeida epileis, Dec. 13 Halysidonta longa, Dec. 24

GEOMETRIDAE:

Phigalia titea, female, March 4 (This was the first of these I had ever encountered!)

Jeff Slotten reports the following from his home in Gainesville, Alachua Co.:

SATURNIIDAE:

Antheraea polyphemus, males February15 - 24, and female March 10, 2010. Actias luna, males February 7 - March 10, 2010. Lithophane abita (recently described by Vernon Brou), 3 males January 24 - February 20, 2010.

NOCTUIDAE:

Feralia major, male February 7, 2010. *Ceratonyx satanaria*, many males February 4 - March 1, 2010. *Egira alternans*, many February through March, 2010. *Xystopeplus rufago*, January and February, 2010.

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

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

Brian sends in the following report: All are county records for Richland Co. Some are marked as State Records. All were taken in Congaree National Park during our survey trips (Brian Scholtens, Joe Culin, John Snyder, Theresa Thom and students). We collected in the park on 13-15 December and 22-23 January. Months of collection are indicated by each species.

VOLUME 32 NO. 1 (2010), PG.44

Anomis erosa, Dec. 8 Antiblemma sp., Jan. 19 Mocis sp., Jan. 2, 18 Meganola sp., Feb. 2 Callopistria floridana, Dec. 17 Acherdoa ferraria, Jan. 31 Psaphida resumens, Jan. 25, Feb. 9, 17

GEOMETRIDAE:

Phigalia denticulata – Dec and Jan Paleacrita merriccata – Dec and Jan Erannis tiliaria – Dec Thysanopyga intractata – Dec Alsophila pometaria – Jan

NOCTUIDAE:

Caenurgia chloropha – Dec Catocala marmorata – Dec Panthea furcilla – Dec Feralia major – Dec and Jan Metaxaglaea viatica – Dec and Jan

VOLUME 32 NO. 1 (2010), PG.45

Metaxaglaea violacea – Dec and Jan Metaxaglaea semitaria – Dec Lithophane patefacta – Jan Lithophane viridipallens – Jan (also from Nov) Eupsilia probably sidus – Jan – STATE record Eupsilia tristigmata – Jan – STATE record Sericaglaea signata – Jan

SPHINGIDAE:

Ceratomia undulosa - Dec

TORTRICIDAE:

Acleris semiannula - Jan - STATE record

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

Ed sends in the following report for January - March 2010:

This is undoubtedly one of the coldest winters on record, not just for Texas, but also Mexico.

Beginning with an early snowstorm in late December that extended into the lower Rio Grande Valley and also into Mexico, this winter has been unrelentingly cold with temperatures not reaching the 70's in Houston and with lowest temperatures in the mid-20's in Houston and upper 20's in the lower Rio Grande valley. This breaks a cycle of more than 10 warm winters in south Texas.

To balance this somewhat, it also has been one of the wettest winters on record both in Texas and northern Mexico.

Reports from the lower Rio Grande valley, chiefly from Mike Rickard, state that nearly 70 butterfly species have been found from January 1 to February 27.

All involve well known resident species.

Standouts include: Achalarus toxeus, Chiomara georgina, Lerodea arabus, Quasimellana eulogius, Pyrisitia proterpia, Anteos maerula, Anteos chlorinde, Pieris rapae (quite rare in south TX, usually), Melanis pixe, Chlorostrymon simaethis, Ministrymon clytie, Myscelia ethusa, Anartia jatrophae, Texola elada, Anthanassa tulcis, all from Hidalgo Co. (mostly Mission and Weslaco areas).

There have been few interesting moths, the most interesting was *Lithophane lemmeri* from Kaufmann, TX (J. McDermott).

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

REFERENCES TO BUTTERFLIES, MOTHS, AND CATERPILLARS IN SHAKESPEARE

Shakespeare had many references to insects in his writings. According to David Miller⁽¹⁾ Shakespeare referred to insects 100 times and mentions insects in all but two of his plays: The Tragedy of King Richard III and Pericles. The mention of bees and wasps are most frequent while butterflies, moths, and caterpillars come in second. Other insects that are mentioned but to a lesser number of times are "...flies and maggots; beetles, crickets and grasshoppers; gnat, flea, ant, louse, gad-fly, bot, water-fly and locust".⁽¹⁾

Some of the lines in Shakespeare referring to butterflies, moths, and caterpillars are the following:

Coriolanus, Act I, Scene 3: "I'll swear 'tis a very pretty boy. I saw him run after a gilded butterfly; and when he caught it, he let it go again; and after it again; and over and over he comes, and up again; catched it again..."

Coriolanus, Act I, Scene iii: "...all the yarn she spun on Ulysses' absence did but fill Ithaca full of moths..."

Coriolanus, Act III, Scene iv:	"When our sea-walled garden, the whole land,
	Is full of weeds, her fairest flowers chok'd up,
	Her fruit trees all unprun'd, her hedges ruin'd,
	Her knots disorder'd, and her wholesome herbs
	Swarming with caterpillars?"
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Coriolanus, Act V, Scene iv: "...there is a difference between a grub and a butterfly; yet your butterfly was a grub..."

Coriolanus, Act IV, Scene vi: "..than boys pursuing summer butterflies, or butchers killing flies..."

King Lear, Act V, Scene iii: "...and laugh at gilded butterflies ... "

And as David Miller further writes in his article in reference to the enemies of King Richard II: "...what can be more picturesque in its acrid piquancy than Bolingbroke's reference to the enemies of the realm?"

Richard II: Act II, Scene iii:

"The caterpillars of the commonwealth, Which I have sworn to weed and pluck away."

Source

 David Miller (Cawthron Institute, Nelson, New Zealand), Shakespearean Entomology, Tuatara (Journal of the Biological Society): volume 1, issue 2, May 1948: <u>http://www.nzetc.org/tm/scholarly/tei-Bio01Tuat02-t1-body-d2.html</u>

The Southern Lepidopterists' News is published four times annually. Membership dues are \$20.00 annually. The organization is open to anyone, especially those with an interest in the Lepidoptera of the southern United States. Information about the Society may be obtained from Marc Minno, Membership Coordinator, 600 NW 34 Terrace, Gainesville, FL 32607, E-Mail: mminno@bellsouth.net, and dues may be sent to Jeffrey R. Slotten, Treasurer, 5421 NW 69th Lane, Gainesville, FL 32653.

SOUTHERN LEPIDOPTERISTS' SOCIETY

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