

# ASSOCIATION FOR TROPICAL LEPIDOPTERA

# NOTES

P.O.Box 141210  
Gainesville, FL 32614, USA  
Editor: Andrei Sourakov  
Assoc. Editor: Thomas C. Emmel

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## Louisiana's Kings and Queens and Other Things

On August 15, 2010, I visited Thistlethwaite WMA in St. Landry Parish, Louisiana, primarily to see if any Delaware Skippers were flying. Among the forty species I saw that day were thirteen Queens, *Danaus gilippus*. Thistlethwaite Wildlife Management Area is located in St. Landry Parish, in south central Louisiana. Seventeen miles of all-weather shell roads and approximately eleven miles of woods trails are maintained within the area, allowing convenient access to virtually the entire tract. The area is 11,000 acres in size. The terrain is generally flat bottomland. Forest cover is predominantly various kinds of oak. Other species present are hackberry, willow, ash, elm, maple, cypress and tupelo gum.

The Queen is reported by Scott to replace the Monarch, *D. plexippus*, in the southeast U.S. (*D.g. berenice*) and the southwest U.S. (*D.g. strigosus* which is paler). While Monarchs are quite common in Louisiana, the more tropical Queen does show up as a regular stray in southern Louisiana. A review of TLS Season Summaries and NABA July Forth Count Results revealed multiple Louisiana sightings over the last fifteen years, mostly in the coastal areas, including an established colony on Grand Isle. In fact, I had seen two singles at Thistlethwaite in 2009 and one in 2008. My friend, Gary Ross, also reported two Queens in 2009, both in his garden in Baton Rouge.

The Southeastern form, *berenice*, ranges from Florida around the Gulf to the Mississippi Valley. It is common in some years, rare in others, primarily arriving along the Gulf in late summer and fall. *Strigosus*, which is paler and has white scaling bordering the narrow black veins of the hindwing, ranges from Mexico through Texas into the Desert Southwest and occasionally into the Great Plains. Both have been reported in Louisiana. The colony at Thistlethwaite is *strigosus* (see photos). Over the three following Sundays, I returned to Thistlethwaite and counted sixteen, thirteen and seventeen Queens, mostly in the same area. They are reproducing on *Asclepias perennis*, aquatic milkweed, which grows in the roadside ditches as well as in the power-line cuts.

But this article is not limited to the presence of an inland colony of Queens. I have, on numerous occasions, noted extremely dark Viceroy, *Limenitis archippus*, at Thistlethwaite. Subspecies *archippus* (present over most of the Viceroy's range) is orangish and mimics the Monarch. In the south where Queens occur, the Viceroy becomes darker. Subspecies *floridensis* (Florida to South Carolina coast) is reddish-brown and reportedly mimics

*D.g. berenice* while subspecies *obseleta* (west Texas - Arizona) is a lighter brown, mimicking *D.g. strigosus*. In Louisiana, the subspecies is *watsoni* (dos Passos). As described by Howe, "unlike *archippus* and *floridensis*, the forewing color of *watsoni* contrasts somewhat with that of the hindwing: the forewing is dark red-brown whereas the hind wing is a paler orange-brown. In addition, the spots in the apex of the forewing are reduced in size and are orange-brown in color." It was described by dos Passos from specimens from Alexandria, Louisiana (about 50 miles north of Thistlethwaite). *Watsoni* also occurs in western Mississippi, and Alabama, west to Texas and north to Arkansas." A comparison of *watsoni* with *floridensis* (see photos below) clearly reflects the ventral differences between those subspecies.

At Thistlethwaite, Viceroy's can regularly be seen from April until October. About 50% seen possess extremely dark dorsal and ventral forewings, much like the type in south Florida; however, these darker versions fly alongside the lighter colored version. Until 2008, I had seen no Queens at Thistlethwaite



Fig. 1: *Danaus gilippus strigosus*, male, 8/15/10, Thistlethwaite WMA, St. Landry Parish, LA; *Limenitis archippus watsoni*, same date and location as above; *Danaus gilippus strigosus*, female, 8/22/10, same location as above.

while Monarchs are quite common throughout the year so I was not sure what environmental or genetic conditions had caused the darker type to exist there.

Initially, the relationship between the Monarch and the Viceroy was thought to be a Batesian Mimicry. However, later studies suggested Viceroy, which feed on willows, were not palatable, maybe not as distasteful as Monarchs, but still distasteful enough to create a Mullerian mimicry relationship with Monarchs. Other experiments have shown that in the Southern U.S., Viceroy benefited from mimicking Queens as Queens are more numerous in that region. However, as explained by Cech/Tudor, “this ‘mimicry triangle’ among these three species now seems far more complex as each has variable levels of toxicity and each appears to be a mimic of the others at various times.” Studies by Ritland and Brower (1991) indicate that *floridensis* is “nearly as unpalatable as Monarchs and more so than Queens.”



Fig. 2: *Limenitis archipus watsoni*, ventral (top) and dorsal (bottom) 5/30/05, Thistlethwaite WMA, St. Landry Parish, LA.

Is it possible the Viceroy at Thistlethwaite are mimicking both Monarchs and Queens? Ventrally, all the Viceroy are superficially similar to a Monarch as it would perch to feed or sun. Dorsally, about half of the Viceroy are orange like a Monarch. As previously stated, Monarchs are much more common than Queens (I’ve seen as many as 33 on one day in April, 2005) so it seems logical that the Viceroy in this region maintain a mimicry relationship with Monarchs. However, there is a significant percentage of Viceroy that are dorsally dark like Queens. With Queens annually migrating into southern Louisiana, are these Viceroy mimicking Queens? Might they be mimicking

both at the same time? While discussing Viceroy around the Houston area, the Tvetens noted that although Viceroy vary considerably in color there, they “in all probability receive some protection by adopting the stereotypical orange-and-black pattern that advertises unpalatability in nature.” If that is so, be they bright orange or burnt orange, might we conclude the survival chances of Thistlethwaite’s Viceroy are increased due to the presence of both milkweed-feeding Danaiids?



Fig. 3: *Limenitis archipus floridensis*, ventral, 5/26/01, Dade Co., FL; *Danaus gillippus berenice*, ventral, 5/26/01, Dade Co., FL.

## References Cited

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**Craig Marks**  
**cmarks@landcoast.com**



## ATL AND SOUTHERN LEP. SOC. JOINT MEETING TOOK PLACE OCTOBER 1-3, 2010

During the meeting, which once again was held at the McGuire Center for Lepidoptera and Biodiversity, the participants had a chance to mingle during the banquet and breaks, jointly go on moth-collecting trips, and take part in business meetings of their respective societies. First and foremost, however, this meeting was successful thanks to its full program of talks. More about the meeting can be found at <http://www.troplep.org>.

List of presentations: Brian G. Scholtens: "Pyraloidea Survey of Great Smoky Mountains National Park;" Deborah L. Matthews: "An Update on the Plume Moths of Florida;" J. Court Whelan and Jaret C. Daniels: "Assessing the Impact of Roadway Mortality on Lepidoptera in North Florida;" Montana Atwater: "Diversity and Pollination Ecology of Flower-settling Moths within Florida Sandhill Communities;" Julieta Brambila: "Efforts for the Early Detection of Exotic Invasive Lepidoptera in Florida;" Marc C. Minno: "Continued Downward Trends of Butterfly Populations in the Florida Keys;" Charles V. Covell, Jr.: "The Biscayne National Park, Florida Bioblitz of 2010;" Jacqueline Y. Miller, Deborah L. Matthews, Thomas C. Emmel, and Andrew D. Warren: "Biodiversity of Lepidoptera in Honduras;" Bob Patterson: "Moth Photographers Group – Future Developments, Central American Moths & North American Larvae;" Elena Ortiz: "Butterfly Diversity in Certified and Non-certified Shade Coffee Plantations in Colombia;" Keith R. Willmott and Andrei Sourakov: "Caterpillar Mimicry? Two Possible Examples in the Neotropical Danainae;" Bruce Purser: "Butterfly Zonation and its Relation to the Geological History of the Eastern Andes, Central Peru;" Christian Salcedo: "The Biology of *Heliconius* Night Roosting: a Foundation;" Thomson Paris and Andrei Sourakov: "Modern Threats to the Lepidoptera Fauna in the Florida Ecosystem;" Delano S. Lewis: "Phylogeny, Revision, & Historical Biogeography of *Heracles* Hübner, 1819 (Lepidoptera: Papilionidae: Papilionini);" Bruce Purser: "Nature and Distribution of *Morpho rhodopteron* on the Sierra Nevada de Santa Marta, N. Colombia;" Andrew D. Warren, S. Kohler, D. Nunnallee & D. G. James: "Our Beloved Buckwheat Blues: A Review of the *Euphilotes* Fauna of the Pacific Northwest (Lycaenidae: Polyommata);" J. Court Whelan and Thomas C. Emmel: "Lepidoptera Education and Ecotourism in the Philippines;" James Adams: "What Family is This Moth in Now? The Revised Classification of the Superfamily Noctuoidea;" Kathy Malone: "Quatro Chicas y Las Mariposas del Puerto Rico."



## 2010 Annual ATL - McGuire Center Photocontest



The 2010 photocontest attracted 140 entries from 11 photographers and was judged by three independent judges in three categories based on scientific and aesthetic merits of the pictures. All winners received valuable prizes and all winning entries are published in this issue of the notes. The next photocontest will be held in September 2011.



Fig. 1. (A) 1st place BUTTERFLIES - *Lycaena phlaeas* L. (Lycaenidae) – Russia, Tula, photo by Alexandr Chuvilin; (C) 1st place, MOTHS - *Saturnia pavonia* L. (Saturniidae), – Russia, Tula, photo by Alexandr Chuvilin; (B) 1st place, IMMATURES *Parnassius apollo* L. (Papilionidae) – Russia, Tula, photo by Alexandr Chuvilin.





Fig. 2. A-E are from Russia, Tula, photos by Alexandr Chuvilin: (A) 2nd place BUTTERFLIES - *Meleageria daphnis* L. (Lycaenidae), (B) 2nd place MOTHS - *Stauropus fagi* L. (Notodontidae), (C) 2nd place IMMATURES - *Hyloicus pinastri* L. (Sphingidae), (D) 3rd place MOTHS - *Zygaena carniolica* (Scopoli) (Zygaenidae); (E) 3rd place IMMATURES - *Smerinthus ocellata* L. (Sphingidae); (F) 3rd place BUTTERFLIES - *Euphyes arpa* (Boisduval & Leconte) (Hesperiidae), photo by Kathy Malone.