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YOU CAUGHT *WHAT* IN YOUR BACKYARD?

Additional key words: *Electrostrymon angelia, Ministrymon azia, Dryas iulia,* Florida, dispersal.

What butterflies are in your back yard? This question has been asked before in the pages of the *Journal* (Howe 1959) and many subsequent notes. Howe identified 64 butterfly species on a nine-acre plot in Kansas, at the time a truly impressive feat. We also

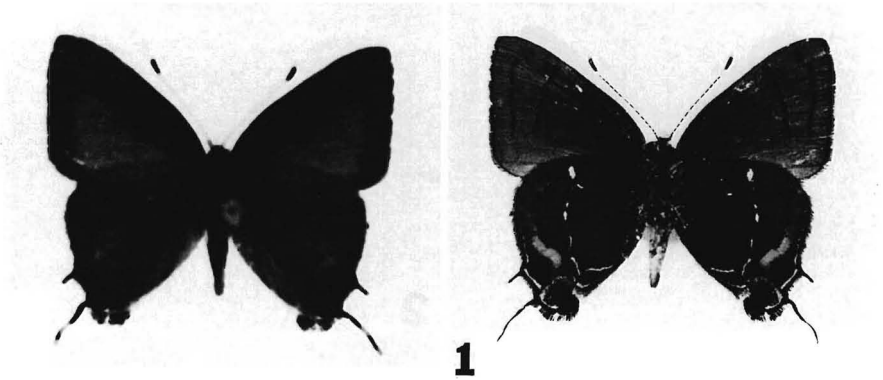


FIG. 1. *Electrostrymon angelia angelia*. Male, upper (left) and under (right) surfaces. Florida: Manatee Co.; 2 mi. E of Samoset, March 1992 (leg. J. Y. Miller).

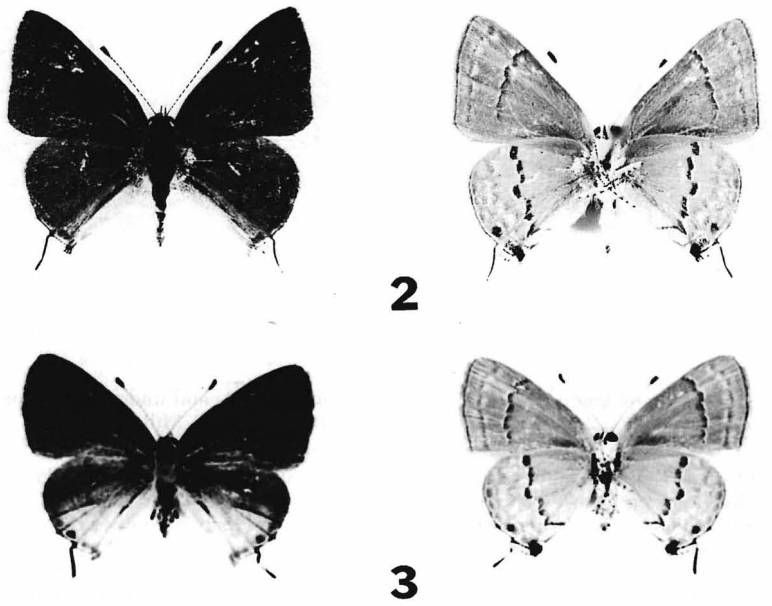
been informally monitoring the butterfly faunas in two localities adjacent or close to our respective homes on the Florida Gulf Coast, one in Manatee County (Millers) and the other in Pinellas County (Anderson). These studies are recreational rather than scientific and undertaken more for curiosity than for any other reason.

The butterfly fauna of each area was reasonably well known as of early 1992, so it was surprising that each of us independently collected, during the latter half of that year, two species previously unrecorded from the west coastal area of the state. Both of these were lycaenids, and both have been recorded only recently from southeastern Florida and the Florida Keys.

Electrostrymon angelia angelia (Hewitson) has become a recent resident in southeastern Florida (Anderson 1974), and its known range extends along the Atlantic coast to about Fort Lauderdale. In March, and again in October 1992, Lee and Jackie Miller encountered this small hairstreak in their backyard nectaring on flowers of *Hyptis verticillata* Jacq. (Lamiaceae) (determination by R. Wunderlin, Univ. So. Florida). Anderson first found this species in Pinellas County in November 1992, nectaring on flowers of goldenrod, *Solidago* sp. (Asteraceae). Since the first sightings of this butterfly on the west coast of Florida were in March 1992, prior to the destruction wrought by Hurricane Andrew in southern Florida in August 1992, that storm could not have been the cause of this range extension. These specimens, one of which is illustrated here (Fig. 1), represent the first records of *E. angelia* for Pinellas and Manatee Counties, and resident populations, although quite small, have been seen in the area until present. The species was previously reported in Lee County on the Florida Gulf Coast by Heinrich in 1989 (see Baggett 1989).

Specimens of *Ministrymon azia* (Hewitson) were collected by Anderson during November 1992 in Pinellas County (Figs. 2, 3). About the same time in Manatee County, Lee and Jackie Miller made two positive sight records, with an additional sight record on the grounds of the Allyn Museum in Sarasota, Sarasota County. The first Manatee County specimen, a female, flew out of a tree and landed on the windshield of a car during a cool day; then it proceeded to thermoregulate there for several minutes with its wings alternately opening and closing, thus revealing the diagnostic ventral red spotband, and the gray-powdered upper hindwing that established its sex. These specimens, or their ancestors, might have been introduced through the actions of Hurricane Andrew, but due to their fresh condition, we suspect the species has been resident longer and simply avoided detection because of its small size and similar appearance to *Leptotes cassius theonus* (Lucas). There also is one record of *M. azia* from New Port Richey, Pasco County (Baggett 1989) captured late that year.

Both *E. angelia* and *M. azia* will feed as larvae on Brazilian pepper, *Schinus terebinthifolius* Raddi (Anacardiaceae), a ubiquitous weed in southern peninsular Florida that is well



FIGS. 2–3. *Ministrymon azia*. **2,** male; **3,** female (3). Upper (left) and under (right) surfaces. Both Florida: Pinellas Co.; St. Petersburg, November 1992 (leg. R. A. Anderson).

established on the Miller property, and *M. azia* also is known to feed upon *Leucaena leucocephala* (Lam.) de Wit (Fabaceae). It seems likely that there has been an established breeding population of one or both species for several years during a series of consecutive extremely mild winters since 1989. Because both butterflies have broad ranges and disperse readily throughout the Caribbean (Smith et al. 1994) and have recently become established in Florida, it is likely that these butterflies arrived in west coastal Florida by natural dispersal. Lee and Jackie Miller have seen *E. angelia* every year since, through the spring of 1996, and Anderson has taken both species in Pinellas County, so apparently both species are still firmly established. The butterflies certainly are not limited by their anacardiaceous foodplant, which ranges to near Clearwater in northern Pinellas County, and both species should be sought elsewhere in southwestern Florida.

Lee and Jackie Miller also observed a specimen of *Dryas iulia largo* Clench on 28 February taking nectar at *Citrus* flowers. It was captured, found to be a ragged male, and unfortunately released before the real significance of the record was realized, as *D. i. largo* was known previously only from extreme southern Florida (Kimball 1965). The Manatee County specimen was observed farther north in west coastal Florida than any previous record, although a recent sighting in Orlando by Deuerling (see Baggett 1993) would suggest that this is another species actively expanding its range, possibly during the recent warm winters.

If there is a moral to be learned from this tale, it is that one can never say with confidence that one knows everything about the distribution of butterflies in an area. Many species may expand their ranges when conditions are favorable only to have the ranges contract subsequently. It will be intriguing to see whether the populations noted here can persist after a cooler winter with several frosts. There are many examples in the literature of transient populations of animals from many parts of the world. Armadillos and opossums are well-known examples of such prior dispersals in North America, and we have ob-

served expansions and contractions of butterflies such as *Calpodes ethlius* (Stoll) and *Siproeta stelenes biplagiata* (Fruhstorfer) in Central Florida. Because of larval hostplant relations, we also must remember that larvae might inadvertantly be transported with nursery plants from different areas within the state. However, the lycaenid records listed here were made long after the active growth period when exotic plants would normally be brought into Central Florida for sale in local nurseries.

We consider voucher specimens to be an absolute necessity in faunal survey studies in order to adequately determine the taxa represented in an area. Vouchers of *M. azia* and *E. angelia* discussed here have been deposited in the collections of the Allyn Museum of Entomology, Florida Museum of Natural History.

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REPRODUCTIVE ADAPTATIONS OF THE TASAR SILKMOTH, *ANTHERAEA MYLITTA* (SATURNIIDAE), TO EMERGENCE SEASON

Additional key words: ovary, coupling, fecundity, hatching, diapause.

Most insects survive periods of environmental stress by entering a state of diapause. The Indian tropical tasar silkworm, *Antheraea mylitta* Drury, completes two to three generations in a year (Sinha & Chaudhuri 1992), and in bi/trivoltine broods undergoes pupal diapause for a period of about six to seven months to overcome unfavorable environmental conditions (Dash & Nayak 1988, Kapila et al. 1991, Sinha & Chaudhuri 1992). Pupal diapause in this species normally terminates at the end of May and eclosion begins in June with the advent of rain (Sinha & Chaudhuri 1992). This is known as optimal seasonal emergence. However, in the diapausing brood a portion of the pupae hatch 1–2 months early, emerging in a presumably unfavorable climate before the rainy season (Kapila et al. 1991). The physiological/hormonal basis of this erratic eclosion remains unclear, although endocrine regulation of pupal diapause in other insects has been well documented (Browning 1981, Denlinger 1985). Daily patterns of insect behavior (e.g., locomotion, feeding, emergence, mating, oviposition, and hatching) are governed by daily cycles of temperature, humidity, and light intensity as well as by physiological events (Beck 1983, Ratte 1985, Ashby & Singh 1990). We report here on ovary morphology and reproductive behavior of "seasonally" and "unseasonally" emerged tasar silk moths.

One thousand diapausing *A. mylitta* pupae of each sex were observed as they emerged