many phenotypic differences between these subspecies and the absence of "intermediates" among the specimens he collected at Chokoloskee. If this hypothesis is correct, *E. d. palmira* could be a rarely encountered (or overlooked) resident species in Florida or an irregular immigrant capable of establishing temporary breeding populations. Clench's failure to find additional *E. d. palmira* at Chokoloskee, two years after his initial visit, may be indicative of temporary residency.

A lack of "intermediates" does not necessarily imply that *E. d. palmira* is worthy of species-level status. If the *E. d. palmira* phenotype is recessive to that of *E. d. daira*, and differences between the subspecies are the result of a single genetic locus under simple dominant-recessive allelic expression, hybrids would possess facies characteristics of the nominate subspecies and recessive phenotypes would resemble *E. d. palmira*. In this genetic scenario, the "many intermediates" discussed and figured by Howe (*op. cit.*) would not be expected to occur. Smith et al. (*op. cit.*) dismissed such "intermediates" as within the range of variation of *E. d. daira*. The recessiveness or genetic swamping (or both) of the *E. d. palmira* phenotype also offer alternative explanations for the temporary occurrence of this taxon at Chokoloskee (Clench, *op. cit.*). The conventional subspecific status of *E. d. palmira* would be challenged by the discovery of a sympatric population of this taxon that is capable of retaining its genetic integrity in the presence of *E. d. daira*.

Finally, one should not preclude the possibility that supposed Floridian *E. d. palmira* are simply extreme examples of *E. d. daira*. This notion is perhaps supported by the paucity of known records. However, records consisting of more than one butterfly resembling *E. d. palmira*, especially males *and* females collected simultaneously within a limited area, suggest more than mere individual variation.

Bicolored males and pale females of *E. daira* encountered in southern Florida should be closely examined. Detailed electrophoretic experiments, breeding, and field studies would help resolve the enduring problematic ecological and taxonomic status of Floridian *Eurema daira palmira*.

The Florida Keys specimens of *E. d. palmira* are deposited in the collections of the authors and The Allyn Museum of Entomology, Florida Museum of Natural History. Thanks are extended to L. D. Miller and T. W. Turner for their opinions regarding the identity of the Florida Keys specimens, and to T. W. Turner, S. J. Ramos and an anonymous reviewer for helpful comments on the manuscript. We also wish to thank J. E. Rawlins of the Carnegie Museum of Natural History for the loan of specimens.

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THE CAPTURE AND RELEASE OF A MONARCH BUTTERFLY (NYMPHALIDAE: DANAINAE) BY A BARN SWALLOW

Additional key words: aposematic, predation, Pennsylvania.

The monarch butterfly, *Danaus plexippus* (Linnaeus) (Nymphalidae: Danainae) is among the best studied of aposematic insects. The monarch's bright orange and black coloration warns predators of its cardenolide chemical defense (Brower, L. P. 1969, Sci. Am. 220:22–29; Brower, L. P. & S. C. Glazier 1975, Science 188:19–25). Although a few predators are able to circumvent the monarch's chemical defense (Brower, L. P. & W. H. Calvert 1985, Evolution 39:852–868; Calvert, W. H., L. E. Hedrick & L. P. Brower

1979, Science 204:847–851; Glendinning, J. I., A. Alonso Mejia & L. P. Brower 1988, Oecologia 75:222–227), this defense is thought to provide the monarch with protection from most vertebrate predators (Brower, L. P. 1984, pp. 109–134 *in* Vane-Wright, R. I. & P. R. Ackery (eds.), The biology of butterflies, Academic Press, London). Although birds do not appear to prey regularly on monarch butterflies, except at the Mexican overwintering sites (Brower & Calvert, *op. cit.*), there is little direct evidence to suggest that wild birds find monarchs aversive (Jeffords, M. R., J. G. Sternburg & G. P. Waldbauer 1979, Evolution 33:275–286). Beak marks found on the wings of monarchs are thought to result from predatory birds capturing and then rejecting the butterflies as unpalatable (Jeffords et al., *op. cit.*). Although Calvert et al. (*op. cit.*) and L. S. Fink and L. P. Brower (1981, Nature 291:67–70) report such behavior, no other accounts are available. I offer here an additional account.

On 25 August 1982 I witnessed a barn swallow, *Hirundo rustica* Linnaeus (Hirundinidae) capture and release a monarch butterfly at the top of a hill on a small farm in Butler County, Pennsylvania. It was late afternoon, on a partly cloudy, calm day (NNW wind at 3–6 m/sec). Mixed hay and fallow fields covered the hilltop. Monarchs, as well as other species of butterflies, foraged at the tips of goldenrod (*Solidago* sp., Asteraceae), Queen Anne's lace (*Daucus carota* (Linnaeus), Umbelliferae), and bull thistle (*Cirsuim vulgare* (Savi), Asteraceae) in the fallow field. An occasional monarch was seen migrating WSW, flying 12–15 m above the ground.

I first saw the barn swallow streaking up away from the earth about 20 m away from me. By the time I had fixed my eyes on the swallow it already had the monarch in its beak and was flying rapidly almost straight upward. A fraction of a second later the swallow dropped the monarch, turned abruptly down, and flew off. I could not tell whether the swallow had released the monarch or if the monarch had struggled free. If the monarch had escaped from the barn swallow, however, the swallow would have had no trouble recapturing it, as the monarch was 15 m above the ground and flying weakly. Yet the swallow made no effort at recapture.

Within moments of release the monarch started flying again. Flying slowly and seemingly insecurely at first, the butterfly flew SW. Gradually it flew with greater vigor, although not as robustly as the other migrating monarchs. Still flying high above the ground the monarch vanished from my view after two or three minutes, as I watched with 10 × 50 power binoculars.

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ZYGAENIDAE TRAPPED WITH ENANTIOMERS OF 2-BUTYL(Z)-7-TETRADECENOATE

Additional key words: pheromones, attraction, isomers, Texas, Florida, Guatemala.

Enantiomers, or optical isomers, of 2-butyl(Z)-7-tetradecenoate (BTDO) have been found to be sex pheromones or sex attractants for three species of Zygaenidae in the United States. This compound was identified as a sex pheromone of the western grapeleaf skeletonizer *Harrisina brillians* (Barnes & McDunnough) by J. Myerson, W. F. Hadden, and E. L. Soderstrom (1982, Tetrahedron Lett. 23:2757–2760). E. L. Soderstrom, D. G.