

The *cardui* flew at a variable height so as to fly only a few feet above fences, or buildings in their path. The flight pattern never varied; the butterflies never veered to avoid an obstacle but simply rose up over it. The flight over open fields was about three feet above the ground level.

The rate at which the *cardui* passed over our line of observation (a width of about 70 feet) was estimated at 12 to 15 individuals per hour during the first days of the migration. Sunday, June 19, 1966 marked a flight peak and also its end. On this windy afternoon the rate of passage increased to 20 to 25 per hour. Few of the *cardui* were observed on any of the days after 4:00 P.M.

A number of specimens of *cardui* captured and examined were old and worn, showing the wear and tear of an apparent long flight. A few of the *cardui* netted were in good condition. A curious phenomenon was noted in connection with the flight of the *cardui*; occasionally they were accompanied by what appeared to be *Polygonia interrogationis* (Fabricius).

Records of *Vanessa cardui* migrating in the eastern United States are few, and little is known concerning the reasons for migration. Host plants are available in western Ohio.

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ADDENDA TO THE LIST OF THE BUTTERFLIES OF MICHIGAN

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"A Revised Annotated List of the Butterflies of Michigan" was published in the Occasional Papers of the Museum of Zoology University of Michigan, Number 617, June 8, 1960 by Sherman Moore. Since *Rhopalocera* collected by myself since 1941 were not included in the list, the seventy entries which follow add to its completeness.

Key: *Zones*: NLP (Northern Lower Peninsula); SLP (Southern Lower Peninsula); county names are given where species have been taken. *Dates*: A date given with a dash (—) following represents the

earliest date captured in zone or with a dash preceding, the latest date of capture in a zone. For clarity, all nomenclature follows dos Passos (1964).

- Lethe portlandia* (Fabr.) SLP: Branch
Lethe eurydice (Joh.) SLP: Branch; —Aug. 24
Euptychia cymela (Cram.) SLP: Calhoun
Cercyonis pegala nephele (Kby.) NLP: Ogemaw. SLP: Branch
Danaus plexippus (L.) SLP: Branch
Speyeria idalia (Dru.) SLP: Branch
Speyeria atlantis (Edw.) NLP: Ogemaw; —Aug. 18
Speyeria cybele (Fabr.) SLP: Branch
Speyeria aphrodite (Fabr.) NLP: Ogemaw. SLP: Branch
Boloria toddi (Holl.) NLP: Ogemaw
Euphydryas phaeton (Dru.) SLP: —July 25
Melitaea harrisii Scud. SLP: Oakland
Melitaea nycteis Dbldy. SLP: —July 25
Phyciodes tharos (Dru.) SLP: Branch
Polygonia interrogationis (Fabr.) NLP: Ogemaw. SLP: Branch
Nymphalis vau-album j-album (Bdv. and Lec.) NLP: Ogemaw
Nymphalis milberti (Godt.) NLP: Ogemaw. SLP: Branch
Nymphalis antiopa (Linn.) SLP: Branch, Calhoun
Vanessa atalanta (Linn.) SLP: Branch
Vanessa cardui (Linn.) SLP: Branch; May 8—
Vanessa virginiensis (Dru.) SLP: Branch
Junonia coenia (Hbn.) SLP: Branch
Limenitis archippus (Cram.) NLP: Ogemaw. SLP: Branch
Limenitis astyanax (Fabr.) NLP: Ogemaw. SLP: Branch
Limenitis astyanax form *atlantis* Nakahara NLP: Ogemaw
Asterocampa clyton (Bdv. and Lec.) SLP: Branch
Strymon melinus Hbn. SLP: Calhoun
Strymon edwardsii (G. and R.) SLP: —Aug. 1
Feniseca tarquinius (Fabr.) NLP: Ogemaw
Lycaena thoe Guer. SLP: Branch
Everes comyntas (Godt.) NLP: Ogemaw
Glaucopsyche lygdamus (Dbldy.) SLP: Calhoun
Celastrina argiolus (L.) SLP: Branch; Apr. 11—Aug. 31
Papilio polyxenes asterius Stoll. SLP: Branch
Papilio glaucus Linn. SLP: Branch
Papilio troilus Linn. SLP: Branch, Calhoun
Colias eurytheme Bdv. SLP: Branch
Colias philodice Godt. SLP: Branch; May 8—
Pieris rapae (Linn.) NLP: Ogemaw. SLP: Jackson
Pieris protodice Bdv. and Lec. NLP: Ogemaw. SLP: Branch
Epargyreus clarus (Cram.) SLP: Calhoun
Thorybes bathyllus (Smith) SLP: Calhoun
Thorybes pylades (Scud.) SLP: Calhoun
Pholisora catullus (Fabr.) SLP: Calhoun
Erynnis icelus (Scud. and Burg.) SLP: Calhoun
Erynnis brizo (Bdv. and Lec.) SLP: Calhoun, Jackson
Erynnis martialis (Scud.) SLP: Calhoun; May 13—
Erynnis juvenalis (Fabr.) SLP: Calhoun; —July 5
Thymelicus lineola (Ochs.) SLP: —Aug. 2
Poanes hobomok (Harris.) SLP: Calhoun