

A RECORD OF *ANAEA AIDEA* (NYMPHALIDAE) FROM
SOUTHERN ILLINOIS

Two worn females of *Anaea aidea* Guerin-Meneville (Nymphalidae) were taken on the morning of 3 September 1972 at Brookport, Massac Co., Illinois. They were captured while on the wing in a weedy, abandoned railroad yard east of town during approximately two hours of collecting by the author. Both specimens were of the summer form, i.e., their forewings had a blunt apex. No others were seen in the area, nor have I observed them there since. This appears to be the first record of the species in Illinois, as previously, the furthest east it had been reported was in Scott Co., Kansas and Jeff Davis Co., Texas by Field (1938, Bull. Univ. Kansas, Lawrence, Kansas, biol. ser. 39: 108). This is mainly a tropical and subtropical insect that occasionally strays north, which undoubtedly accounts for this record. The specimens are currently retained in the author's collection.

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BUTTERFLIES AS PREY FOR CRAB SPIDERS (THOMISIDAE)

Although crab spiders (Thomisidae) have long been known to capture various insect prey while concealed in flowers, there are surprisingly few published observations where butterflies are the prey. Hobby (1930, Proc. Ent. Soc. London. 5: 107-110) cited a 1902 record by E. B. Poulton when a Satyrid butterfly, *Melanargia lachesis* Hübner, was captured by a crab spider in Spain. In another early record, Bell (1921, Bull. Brooklyn Ent. Soc. 16: 96-97) mentioned that *Epargyreus tityrus* Fabricius was captured by a crab spider, *Misumena vatia* (Clerck). Some years later, Voss (1953, Lepid. News. 7: 54) recorded that *Ancyloxpha numitor* (Fabricius) was similarly taken in Michigan, and *Libythea bachmanii* Kirtland and *Polites mystic* (Scudder) in Pennsylvania. None of the crab spiders were identified. Conway (1954, Lepid. News. 8: 28) reported the seizure of a *Papilio glaucus* Linnaeus by a crab spider in Illinois. Nielson (1958, Lepid. News. 12: 202) stated that a *Lycaena phlaeas americana* (Harris) escaped after being grasped temporarily by a crab spider in Michigan. In a more recent account, Jennings & Toliver (1976, J. Lepid. Soc. 30: 236-237) discussed capture of the pine butterfly, *Neophasia menapia* (Felder & Felder) in South Dakota by an immature crab spider, *Misumenops* sp.

It is of interest to record additional observations of butterflies which were attacked and captured by crab spiders. The senior author has been interested in this behavior, and since 1960 has made numerous observations in which crab spiders captured butterflies on various flowers in Maryland. In each case the prey and predator were collected and preserved, and the associated plant identified. The spiders were identified by the junior author.

In Table 1 are given the butterflies captured by two species of crab spiders, *Misumenoides formosipes* (Walckenaer) or *Misumenops celer* (Hentz), along with collection information. The data indicate that the former species was found with the butterfly prey more often than the latter. Most of the butterflies preyed on were Hesperiiidae, although much larger Papilionidae were also taken. Single species of Lycaenidae and Nymphalidae were captured. A total of 11 different species of butterflies were prey for these crab spiders; and 9 additional species of butterflies are recorded in this note. The captured butterflies varied from badly worn to nearly fresh condition. The senior author witnessed the actual attack on a male *Wallen-*

TABLE 1. Butterflies captured by crab spiders in Maryland.

Species	Sex	Date	Town (County)	Flower Host
Captured by <i>Misumenoides formosipes</i> (Walckenaer)				
HESPERIIDAE				
<i>Atalopedes campestris</i> (Boisduval)	M	6 Sept. 72	Fair Haven (Anne Arundel)	<i>Eupatorium purpureum</i> L.
<i>Atalopedes campestris</i> (Boisduval)	F	10 Sept. 74	Plum Point (Calvert)	<i>Trifolium pratense</i> L.
<i>Atalopedes campestris</i> (Boisduval)	F	16 Sept. 74	Plum Point (Calvert)	<i>Trifolium pratense</i> L.
<i>Atalopedes campestris</i> (Boisduval)	F	13 Sept. 75	Fair Haven (Anne Arundel)	<i>Eupatorium coelestinum</i> L.
<i>Atalopedes campestris</i> (Boisduval)	M	14 Sept. 75	Plum Point (Calvert)	<i>Tagetes</i> sp.
<i>Atalopedes campestris</i> (Boisduval)	M	1 Sept. 76	Fair Haven (Anne Arundel)	<i>Eupatorium purpureum</i> L.
<i>Wallengrenia otho</i> (Smith)	M	21 Aug. 74	Point Lookout (St. Marys)	<i>Eupatorium hyssopifolium</i> L.
<i>Wallengrenia otho</i> (Smith)	M	22 Aug. 76	St. Inigoes (St. Marys)	<i>Solidago graminifolia</i> (L.)
<i>Polites coras</i> (Cramer)	M	19 Aug. 69	Beltsville (Prince Georges)	<i>Prunella vulgaris</i> L.
<i>Polites themistocles</i> (Latreille)	M	7 Sept. 76	Benedict (Charles)	<i>Cirsium arvense</i> (L.)
<i>Ancyloxypha numitor</i> (Fabricius)	M	20 Aug. 73	Plum Point (Calvert)	<i>Polygonum pensylvanicum</i> L.
<i>Lerema accius</i> (Smith)	M	5 Sept. 75	Breezy Point (Calvert)	<i>Buddleia</i> sp.
<i>Epargyreus clarus clarus</i> (Cramer)	—	31 Aug. 63	Bryantown (Charles)	<i>Eupatorium purpureum</i> L.
<i>Epargyreus clarus clarus</i> (Cramer)	F	11 Sept. 66	Breezy Point (Calvert)	<i>Clitoria mariana</i> L.
<i>Epargyreus clarus clarus</i> (Cramer)	F	10 Aug. 75	Plum Point (Calvert)	<i>Solidago graminifolia</i> (L.)
<i>Epargyreus clarus clarus</i> (Cramer)	F	30 Aug. 75	Plum Point (Calvert)	<i>Eupatorium hyssopifolium</i> L.
<i>Epargyreus clarus clarus</i> (Cramer)	M	4 Sept. 76	Patuxent City (Charles)	<i>Cirsium arvense</i> (L.)
<i>Epargyreus clarus clarus</i> (Cramer)	M	6 Sept. 76	Burnt Store (Charles)	<i>Eupatorium coelestinum</i> L.
<i>Epargyreus clarus clarus</i> (Cramer)	F	6 Sept. 76	Patuxent City (Charles)	<i>Cirsium arvense</i> (L.)
PAPILIONIDAE				
<i>Papilio glaucus glaucus</i> Linnaeus	M	4 Sept. 76	Patuxent City (Charles)	<i>Cirsium arvense</i> (L.)
<i>Papilio glaucus glaucus</i> Linnaeus	F	24 Sept. 76	Patuxent City (Charles)	<i>Cirsium arvense</i> (L.)
LYCAENIDAE				
<i>Strymon melinus humuli</i> (Harris)	F	8 Sept. 76	Benedict (Charles)	<i>Lespedeza virginica</i> (L.)
NYMPHALIDAE				
<i>Phyciodes tharos tharos</i> (Drury)	F	19 Sept. 73	Huntingtown (Calvert)	<i>Daucus carota</i> L.
		Captured by	<i>Misumenops celer</i> (Hentz)	
HESPERIIDAE				
<i>Poanes viator zizaniae</i> Shapiro	F	25 Aug. 60	Breezy Point (Calvert)	<i>Clitoria mariana</i> L.
NYMPHALIDAE				
<i>Phyciodes tharos tharos</i> (Drury)	F	31 Aug. 76	Plum Point (Calvert)	<i>Apocynum cannabinum</i> L.

grena otho (Smith) on 21 August 74 which happened in an instant. The *Wallengrena otho* dated 22, August 76 was collected by Jonathan P. Haliscak.

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OVIPOSITION BEHAVIOR OF COLONIZED *CALLOSAMIA PROMETHEA*
(SATURNIIDAE)

In maintaining colonies of *Callosamia promethea* (Drury) we use paper bags to collect eggs from fertile females. Just prior to the hatching of eggs, we insert food plant cuttings into the bags and leave them there until the newly-hatched larvae have migrated and started to feed (Miller & Cooper, 1977, J. Lepid. Soc. 31: 146-147). This procedure involves only minimal handling of eggs and larvae and can be used with maximum effectiveness when a large number of eggs is deposited in a single bag over a short period of time. This minimizes the time food plants must be kept in the bags and provides groups of larvae of the same approximate age. To determine the optimum period for collecting eggs, we conducted a detailed study of the oviposition behavior of *C. promethea* females from our colony. This paper reports the oviposition profile we have elucidated for this species.

The adult moths used in the study were second generation individuals from a colony maintained in Frederick Co., Maryland. Pupae of both sexes were held in 4 large indoor emergence cages. As the adults emerged, the females either mated in the emergence cages, or were transferred to portable outdoor cages (Miller & Cooper, 1976, J. Lepid. Soc., 30: 95-104) to attract males. Only females that mated on the day of emergence or the following day were used. The mated moths were observed closely so that the females could be transferred to oviposition bags as soon as the pairs separated. Each female moth was held in a bag overnight and transferred to a new bag each morning until death. After a period of time sufficient to allow all eggs to hatch, each bag was opened to record the total number of eggs and the total number of larvae hatched.

TABLE 1. Summary of oviposition data obtained from colonized *Callosamia promethea* females.

Night After Mating	Number Females	Eggs Deposited		% Hatch
		Number	Cumulative %	
1	28	1695	35.5	94.1
2	28	1577	68.5	94.4
3	28	689	83.0	88.8
4	28	373	90.8	75.0
5	28	212	95.2	83.9
6	23	153	98.4	77.7
7	16	60	99.7	71.8
8	7	7	99.8	30.0
9	4	5	100	0
10	1	0	100	0