behavior of this *A. polyphemus* colony. These 16 individuals deposited a total of 3471 eggs over a 9-day period. All females survived for at least 4 days after mating; 3 individuals lived for 8 days. The average longevity after mating was 6.1 days. The maximum number of eggs deposited by a single female that lived for 8 days was 357; the minimum number was 84 for a female that lived for 4 days. The average number of eggs deposited per female was 216.9. Average percent hatch decreased gradually with time after mating of the females, with a marked decrease after the fifth night.

From these observations we conclude: 1) feeding on egg shells by *A. polyphemus* larvae after they hatch does not adversely affect the collection of oviposition data; 2) whether or not a female *A. polyphemus* mates with a reared male or a wild male does not appear to influence either the total number of eggs deposited or the percent hatch; and 3) *A. polyphemus* follows the general pattern reported for other giant silkworm moth species (the optimum period for collecting eggs is during the first three nights after mating).

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NATURAL INTERSPECIFIC PAIRING BETWEEN *PIERIS VIRGINIENSIS* AND *P. NAPI OLERACEA* (PIERIDAE)

Recent records for *Pieris napi oleracea* Harris and its congener *P. virginiensis* Edw. confirm that although the latter has a more southerly distribution, the geographic ranges of these two species overlap widely in the northeastern United States and upper Great Lakes region (e.g., Forbes 1960, Lepidoptera of New York and neighboring states, Part IV, Cornell Univ. Agric. Expt. Sta., Ithaca, New York; Muller 1968, J. New York Entomol. Soc. 76: 303–306; Tasker 1975, J. Lepid. Soc. 29: 23; Shull 1977, ibid., 31: 68–70; Wagner & Mellichamp 1978, ibid., 32: 20–36; Drees & Butler 1978, ibid., 32: 198–206). The two species are ecologically as well as morphologically distinct. The univoltine habit of *P. virginiensis* corresponds well with the vernal phenology of its woodland larval foodplant (*Dentaria* spp., primarily *D. diphylla* Michx.), although some potential for polyphenism exists (Shapiro 1971, Ent. News 82: 13–16). *P. n. oleracea* is usually bi- (sometimes tri-) voltine and occupies a variety of habitats. These include the beech-maple-hemlock woods in which *P. virginiensis* may be found (where *P. n. oleracea* also utilizes *Dentaria* spp. as a larval foodplant) as well as other wooded areas (e.g. tamarack bog, Shull 1977, op. cit.; *Thuja occidentalis* swamp, Chew 1978, J. Lepid. Soc. 32: 129) and open areas where it exploits several native and naturalized crucifer species as larval foodplants (Chew 1978, Atala 5: 13–19).

Despite the geographic overlap of these species, however, sympatry on a local scale seems to be rather uncommon, with the result that members of these two species do not frequently interact. Known areas of local sympatry are southern Vermont, western Massachusetts (Howe 1975, The butterflies of North America, Doubleday, Garden City, New Jersey; A. B. Klots, in litt.) and northern Michigan (Wagner, in litt. and 1956,

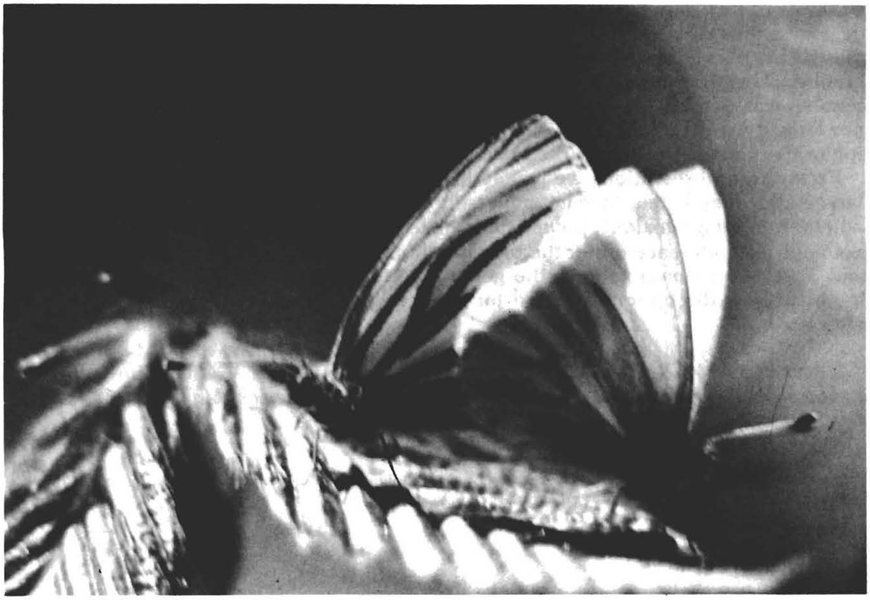

FIG. 1. *Pieris virginiensis* ♀ (right) × *P. napi oleracea* ♂ (left). Wahconah Falls State Park (Berkshire Co.), Massachusetts, 8 May 1979, 1110–1124 EDT, leg. F. Chew. Note that the suffused, "smoky" appearance of the HW underside of *P. virginiensis* contrasts with the sharp, intense melanic markings on the HW underside of the spring brood of *P. n. oleracea*. Photograph by Jason Weintraub.

Lepid. News 10: 18–24). In western Massachusetts near Dalton (Berkshire Co.), both species fly in beech-maple-hemlock woods where *Dentaria diphylla* Michx. is abundant. On 8 May 1979, a clear, calm day (ca. 22°C), M. Deane Bowers, Ira M. Heller, Jason Weintraub and I visited Wahconah Falls State Park near Dalton. We saw several *P. virginiensis* females and several worn *virginiensis* males. We also saw about a dozen fresh *P. n. oleracea* males but failed to find any *oleracea* females. About 1030 h, Deane Bowers saw an interspecific pairing (*virginiensis* ♀ × *oleracea* ♂). This pair eluded capture. We saw a second such pairing at 1110; it is possible that a single pair was seen twice. We also saw a *virginiensis* × *virginiensis* pairing at 1324.

The second interspecific pair (Fig. 1) was captured and remained coupled until 1124. The female was later placed in a small net cage over *Dentaria diphylla* leaves under Sylvania fluorescent "Cool White" and "Gro-lux" lights. After a two day delay, the *virginiensis* female laid 18 eggs over the succeeding eight days. These eggs were kept in a humidified incubator at 19°C; other *virginiensis* and *napi oleracea* eggs hatched in 5–6 days under these conditions. After more than three weeks, some of the *virginiensis* × *oleracea* eggs collapsed. None hatched. Dissection of the *virginiensis* female later revealed that her body contained a single spermatophore.

These pairings are of interest not only because they involve non-conspecific individuals, but also because the individuals represent closely related native species which maintain distinctness in sympatry as well as allopatry (Klots 1951, A field guide to the butterflies, Houghton Mifflin, Boston; Ehrlich & Ehrlich 1961, How to know the butterflies, Brown, Dubuque, Iowa; Howe, 1975, op. cit.; Lorkovic 1978, Acta entomologica Jugoslavica 14: 13–24). Natural interspecific pairings between native Nearctic *Pieris* and the naturalized *Pieris rapae* (e.g., Scudder 1889, Butterflies of New England, Boston, p. 1212; Priestaf 1972, J. Lepid. Soc. 26: 104) may reflect the relatively recent introduction of *P. rapae* to North America and its subsequent geographic overlap with native *Pieris* (Scudder 1889, loc. cit.; Klots 1951, loc. cit.). The possibility that crosses between *P. virginiensis* and *P. n. oleracea* from this locality are fertile can be tested using laboratory-reared stock. Bowden (in litt. and 1972, Proc. Brit. Entomol. Nat. Hist. Soc. 4: 103–117) found that some crosses between *virginiensis* and *napi oleracea* individuals (from stocks from different localities) produced viable hybrid offspring (tests of hybrid fertility were negative but too few to be conclusive); others produced infertile eggs. If the artificial crosses produce fertile hybrid offspring, then one might expect to find some evidence of introgression in sympatric populations (cf. Hovanitz 1963, J. Res. Lepid. 1: 124–134). If the crosses are not fertile, then the observation that these two distinct, sympatric, native *Pieris* do not exhibit more effective pre-zygotic isolating mechanisms is curious (cf. Shapiro 1975, Am. Midl. Nat. 93: 424–433).

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UTILIZATION OF GRASS INFLORESCENCES AS ADULT RESOURCES BY RHOPALOCERA

Adult Lepidoptera utilize a number of energy sources to supplement the nutritive material assimilated during the larval stage. While flower nectar is the most common adult resource, others, e.g., rotting fruit, carrion and dung are often utilized (Downes 1973, J. Lepid. Soc. 27: 89–99; Neck 1977, J. Res. Lepid. 16: 147–154). Flowers most frequently visited are those with colorful petals and/or sepals. While tropical grasses are visited by a large number of insect species (Soderstrom & Calderon 1971, Biotropica 3: 1–16), as a general rule, grasses have non-conspicuous, anemophilous flowers which have few, if any, insect visitors.

Herein I report massive utilization of grass inflorescences by several species of Rhopalocera. Observations were made along Sandy Creek in Enchanted Rock State Park, Llano Co., Texas, on 27 October 1978 from 1000 to 1700 h. Skies were cloudless; temperature range was 10°–25°C during the observation period.

Rhopalocera were visiting inflorescences of two grass species: K-R bluestem, *Bothriochloa ischmaeum* (L.) Keng var. songarica (Fisch & Mey.) Celarier and Harlan, and Dallis grass, *Paspalum dilatatum* Poir. The following species and numbers were observed during a single transect: *Precis coenia* (Hübner) (51), *Danaus gilippus strigosus* (Bates) (8) and *Cynthia cardui* (L.) (2). Butterflies had their probosces extended towards and around the base of achenes of the inflorescences. Achenes of both these grass species were post-anthesis, but some substance was apparently being removed from the shiny surface of the achenes.

Other rhopaloceran species present at this site but not observed at the grass inflorescences were *Anaea andria* Scudder, *Ancyloxypha numitor* (Fabricius), *Atlides halesus corcorani* Gunder, *Chlosyne lacinia* var. adjutrix (Scudder), *Colias (Zerene) caesonia* Stoll, *Colias eurytheme* Boisduval, *Eurema nicippe* (Cramer), *Nathalis iole* Boisduval, *Physiodes phaon* Edwards and *Phyciodes vesta* Edwards. Most of these species flew over the two grasses with no evidence of attraction. Butterfly families represented by the above species include Hesperiidae, Lycaesidae, Nymphalidae and