thus, for any particular group of eggs, resulted in wider variation in physiologic ages of the embryos and subsequent stages. Eggs were collected from 40 reared female *A. polyphemus* in paper bags as described by Miller & Cooper (1980). Daily oviposition rates represent the average eggs per night for the first three nights after mating. Total eggs represent the total eggs deposited during the lifespan.

Antheraea polyphemus females live from five to 10 days after mating (mean = 7.1; S.D. = 1.3). No significant correlation (r = 0.14) was found between the total number of eggs deposited and female longevity. However, daily oviposition rates were highly correlated (r = 0.94) with the total number of eggs deposited (Fig. 1). The total number of eggs deposited averaged 231.6 ± 67.7. The number of eggs deposited per night during the first three nights after mating averaged 68.5 ± 19.4. Thus, females that deposited greater total numbers of eggs during their lifespan did not live longer and deposit them over a longer period of time. They deposited their eggs at a greater rate during the first three nights after mating. The relationship between the three-day average oviposition (E_{d3}) and the total number of eggs deposited (E_t) is described by the linear regression equation: $E_{d3} = 6.44 + 0.27\ E_t$. Using the relationship we previously demonstrated (Miller, et al., 1982) between NME and WT, and between NME and TE, it is possible to estimate daily oviposition (E_{d3}) on the basis of pupal weight (WT) as follows:

$$E_{d3} = 6.44 + (0.27\ (22.4 + 45.9\ WT))$$

Aside from the value of this information in rearing giant silkworm moths for research purposes, the adaptive significance of these findings must also be noted. It appears that *A. polyphemus*, that does not feed as an adult, is able to efficiently use stored energy reserves obtained in the larval stage to deposit the majority of its eggs (74 percent) in a relatively short period of time (three days) independent of the total number of eggs deposited or the life-span of the moth.

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ADDITIONAL COMMENTS ON THE BUTTERFLIES OF THE AUSTIN, TEXAS, REGION

Recently, Durden (1982, J. Lepid. Soc. 36:1–17) presented and analyzed a list of 173 species of butterflies and skippers from a ten county region centered around Austin, Texas. Special attention was given to the 128 species found in Barton Creek canyon in the Balcones Fault Zone area of Austin. Below are comments on two species attributed to this author's collecting activities plus the report of an additional species to the Austin region.

In his list, Durden (op. cit.) credited an Austin specimen of *Siproeta* (*Victorina*) *stelenes biplagiata* (Fruhstorfer, 1907) to "R. Neck." Although stray individuals of this species undoubtedly occur in the Austin area on rare occasions, I have never collected *biplagiata* in Austin. The closest personal record of *biplagiata* to Austin is a female collected in Garner State Park, Uvalde County, Texas, on 14 October 1976. Collection was made in the canyon of the Frio River, approximately 210 kilometers from Austin. The specimen was extremely worn and exhibited very weak flight behavior. Both these

observations indicate that the specimen was a long distance dispersant organism, one of many individuals of several species of tropical affinity which move northward in late summer and autumn of years in which moisture is sufficient (Neck, 1978, J. Lepid. Soc. 32:111–115). Any Austin specimens would be of similar origin. Note should be made of the report of this species by Parks (Engelhardt, 1934, Brooklyn Entomol. Soc. 29:16) at San Antonio (125 km to the south) following a major hurricane in south Texas (see Neck, 1977, J. Lepid. Soc. 31:67–68).

The report of *Eueides isabellae zorcaon* (Reakirt, 1866) credited to "R. Neck" refers to a specimen sighted (but not collected) on 19 August 1971 on the floodplain of the Colorado River next to presentday Town Lake. This tract of land was highly disturbed by human activities in 1971 (now occupied by Austin High School). Weedy plants with significant nectar resources inhabited the area and attracted numerous species of butterflies. The most important nectar source was *Verbesina encelioides*, a plant which is a major nectar source for butterflies in central Texas (see Neck, 1977, J. Res. Lepid. 16: 147–154). Fall 1971 was a time of prodigious northward movement by countless butterflies of numerous species as a result of heavy rains in August following a period of extreme drought (Helfert, 1972, Entomol. News 82:49–52; Neck, ms. submitted to J. Lepid. Soc.). Kendall (1972, J. Lepid. Soc. 26:49–56) reported a number of records of *zorcaon* from southern Texas in 1968; northernmost specimen was from San Antonio (125 km south of Barton Creek area). Occurrence of these 1968 specimens was attributed to introduction and establishment of breeding populations due to environmental effects associated with Hurricane Beulah of September 1967. Impact of this hurricane on the butterfly fauna of the Austin area has been discussed (Neck, 1978, J. Lepid. Soc. 32:111–155).

I do, however, have one species to add to Durden's list of Austin area butterflies. I collected a moderately worn female *Anteos chlorinde nivifera* (Fruhstorter, 1907) on 10 November 1970 within the confines of the Brackenridge Field Laboratory (BFL) of the University of Texas at Austin within the city limits of Austin. The BFL specimen was collected near the mouth of an unnamed creek whose lower reaches are flooded by Town Lake (Colorado River), only 3.5 km from the mouth of Barton Creek. *A. c. nivifera* is well-documented to be a long distance traveler and is known as far north as Colorado and Kansas (Brown, 1960, J. Lepid. Soc. 14:156; Field, 1938, Bull. Univ. Kansas Biol. Series 39(10):1–328). Parks (see Engelhardt, op. cit.) also reported this species from Austin following a major hurricane in southern Texas (Neck, 1977, J. Lepid. Soc. 31:67–68). *A. c. nivifera* was also found in Austin in 1968 (*leg.* W. P. Hard, specimen in R. O. Kendall coll.); this year followed a major hurricane (Beulah) in 1967 which caused alterations in the butterfly fauna of the Austin area (Neck, 1978, J. Lepid. Soc. 32:111–115; 1981, Ibid. 35:22–26).

Another comment is appropriate concerning the listing under *Zerene cesonia* (Stoll, 1790) of form "stainkeae" Field. Durden was referring to the form with reduced marginal melanic markings. This form is correctly referred to as form "immaculsecunda" Gunder and is periodically common especially in late summer and autumn when substantial movement from Mexico occurs (see Neck, 1981, J. Lepid. Soc. 35:22–26). Form "stainkeae" is a "rather rare white female form . . . with change of color yellow to white" (Field, 1936, J. Entomol. & Zoology (Pomona College) 28(2):17–26), which has been illustrated by Kimball (1965, Lepidoptera of Florida, Fla. Dept. Agric. 363 pp. pl. 1, fig. 22). Durden (pers. comm.) has collected these whitish forms in the Austin area.

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