

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.

JOHN H. FALES, 2809 Ridge Road, Neeld Estate, Huntingtown, Maryland 20639.

DANIEL T. JENNINGS, 214 Main Street, Orono, Maine 04473.

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

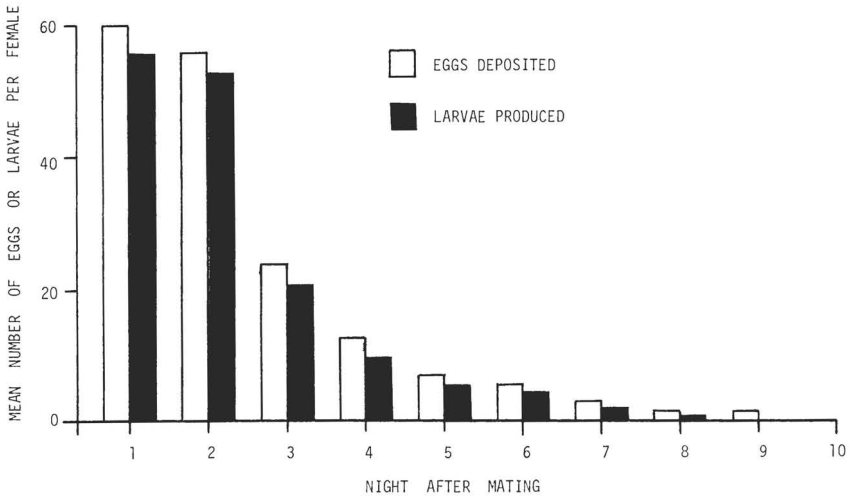


Fig. 1. Oviposition profile for colonized *Callosamia promethea* females.

Table 1 summarizes the data we obtained for 28 *C. promethea* females. These individuals deposited a total of 4,771 eggs over a 10-day period. All females survived for at least 5 days after mating; one individual lived for 10 days. The average longevity after mating was 6.8 days. The maximum number of eggs deposited by a single female that lived for 6 days was 262; the minimum was 80 eggs for a female that lived for 5 days. The average number of eggs deposited per female was 170.4. Data on percent hatch were variable, but the general trend was one of decreasing hatchability with increasing time after mating of the female. Percent hatch did not decrease markedly until after the 7th night.

To determine an optimum period for collecting eggs, we considered our findings in terms of the average number of eggs (or larvae) produced by a female moth (Fig. 1). Collecting eggs beyond the 3rd night after mating would be of decreasing efficiency for the effort involved because, although the percent hatch remains relatively high through the 7th night, the actual number of eggs deposited beyond the 3rd night is small. We have concluded from this study that the optimum period for collecting eggs under the conditions of our colony is during the first 3 nights after mating.

THOMAS A. MILLER & WILLIAM J. COOPER, *U. S. Army Medical Bioengineering Research and Development Laboratory, Fort Detrick, Frederick, Maryland 21701.* (This research was not supported by government funds; the opinions contained herein are those of the authors and should not be construed as official or reflecting the views of the Department of the Army.)