

Research Note

NOTES ON THE LIFE CYCLE OF THE BEAN LEAF SKELETONIZER, *Syngrapha egena* (Guenée) (Lepidoptera:Noctuidae) in PUERTO RICO¹

The bean leaf skeletonizer, *Syngrapha egena* (Guenée), figure 1 and 2, has been mainly a tobacco pest in Puerto Rico, possibly due to the lack of commercial production of beans throughout the Island. This insect was reported first in 1923 by Wolcott,² from tobacco at Cayey, and later by Leonard³ from lima bean at Cidra. During the years 1973 to 1975 the bean leaf skeletonizer has appeared with increasing frequency in some

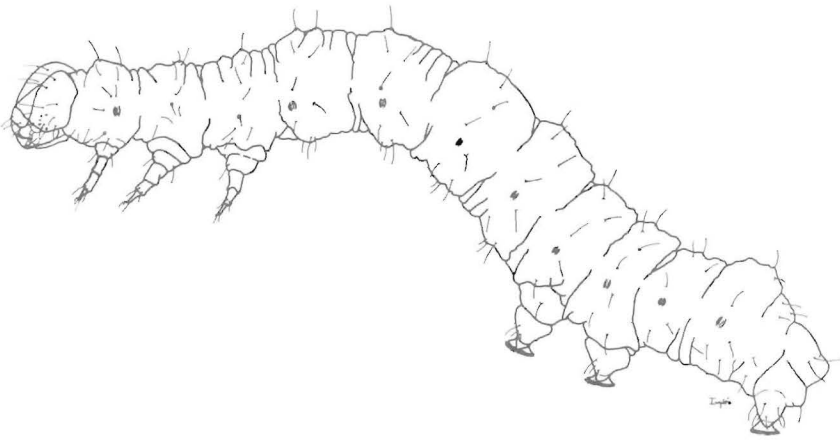


FIG. 1.—Full-grown larva of the bean leaf skeletonizer, *Syngrapha egena* (Guenée) (R. Inglés.)

areas (Cidra, Orocovis, Aguas Buenas) of the Island, causing moderate damage to tobacco leaves. The larva eats portions of the leaves, and when pupating it ties the leaf edges, reducing their commercial value.

The purpose of this work was to develop a better knowledge of the local duration of the various stages of this pest as a basis for future control measures.

To obtain material for the life cycle studies, a preliminary rearing test was performed in the laboratory with larvae from a tobacco field at Aguas Buenas. These larvae were reared on artificial diet (Vanderzant

¹ Manuscript submitted to Editorial Board June 24, 1976.

² Wolcott, G. N., The insects of Puerto Rico, J. Agr. Univ. P.R. 32(3): 603, 1948.

³ Leonard, M. D., Notes on insect conditions in Puerto Rico for the fiscal year July 1931 thru June 1932, J. Dept. Agr. P.R. 17(2): 97-137, 1933.

modification)⁴ until pupation. The pupae were transferred to jelly jars (1 liter capacity) in which sterilized sand, wetted with 2% Benlate⁵ solution to minimize fungi infection, was used as an emerging medium. A piece of wire was placed inside the jelly jars to provide a support above the sand so that the emerging adults could climb on it and stretch their wings. Once the adults emerged, they were transferred to new jelly jars

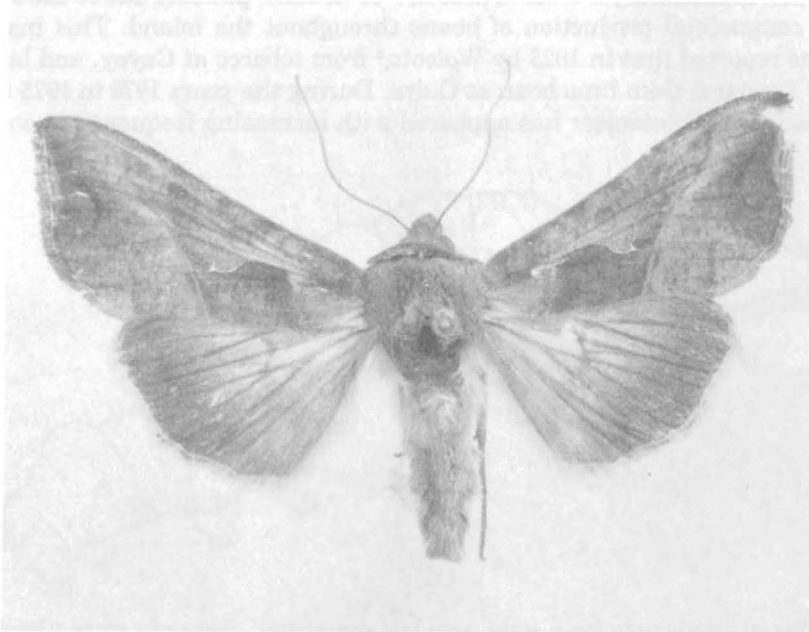


FIG. 2. — Adult of the bean leaf skeletonizer, *Syngnapha egea* (Guenée) (R. Inglés.)

with wax paper strips and cotton balls moistened with 15% honey solution hanging from the lid. The paper strips acted as oviposition sites and the cotton balls as feeding sites.

The eggs from this rearing were used for the study on the biology of the bean leaf skeletonizer. The studies were done in the laboratory under a bioclimatic chamber in which temperature was kept at 60° F during the night and 70° F during the day for a constant daily light period of 12 hours.

⁴ Vandérsant, E. S., Richardson, C. D., and Fort, S. W., Jr., Rearing of the bollworm on artificial diet, *J. Econ. Entomology*, 55(1): 140, 1962.

⁵ Trade names are used in this publication solely for the purpose of providing specific information. Mention of a trade name does not constitute a guarantee or warranty of equipment or materials by the Agricultural Experiment Station of the University of Puerto Rico or an endorsement over other equipment or materials not mentioned.

Eggs were placed in jars (36 ml capacity) filled with approximately 12 g of Vanderzant modified diet until hatching. The hatched larvae, pupae, and adults were reared and maintained following the procedure described above for these stages.

Table 1 shows the duration of the egg stage, the five larval instars, the pupa, and the adult stages. Table 2 shows the length of the larvae and

TABLE 1.—Duration of life cycle stages of the bean leaf skeletonizer [*Synggrapha egena* (Guenée)]

Stages	Duration of stages (days)		
	Minimum	Maximum	Average
Egg (30) ¹	5	5	5.0
Larva			
1st. (19)	4	5	4.4
2nd. (18)	3	5	3.4
3rd. (17)	2	9	4.0
4th. (17)	3	7	4.1
5th. (17)	4	8	5.3
Prepupa (17)	2	3	2.5
Pupa (10)	13	14	13.7
Adult (10)	4	7	5.3

¹ Number of specimens from which data were taken.

TABLE 2.—Larval and pupal length and head capsule width of the bean leaf skeletonizer [*Synggrapha egena* (Guenée)]

Stages	Length (mm)			Head capsule width (mm)		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Larva						
1st. (42) ¹	1.2	2.3	1.8	0.25 (5)	0.25	0.25
2nd. (34)	4.9	8.5	6.8	.42 (4)	.46	.45
3rd. (20)	12.0	18.0	16.0	.66 (16)	1.10	.93
4th. (8)	18.0	24.0	20.5	1.21 (19)	1.57	1.40
5th. (9)	22.0	33.0	28.4	2.03 (9)	2.32	2.16
Pupa (3)	18.0	19.0	18.5	—		

¹ Number of specimens from which data were taken.

the head capsule width. The average duration of the egg stage was 5 days. That of the instars (5 instars and prepupa period) was 23.7 days. The pupal stage lasted for an average of 13.7 days, and the adult for 5.3 days.

The 5 larval instars had an average total length of 1.8 to 28.4 mm and the head capsule width ranged from 0.25 to 2.16 mm. The pupal total length averaged 18.5 mm.

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