

PARASITES OF THE PEPPER FLOWER-BUD MOTH  
(LEPIDOPTERA: GELECHIIDAE) IN FLORIDA

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The pepper flower-bud moth, *Symmetrischema capsica* (Bradley & Polovný, (Lepidoptera: Gelechiidae) described from specimens reared from *Capsicum annum* L. in Montserrat, West Indies, occurs widely in the Caribbean. It has been an important pest of *Capsicum* spp. in this region for at least 65 years (Wilson 1923). It occurs in states in the USA bordering the Gulf of Mexico and also has been collected in Mexico (Bradley & Polovný 1965). In 1988 this species was reared from an uncultivated *Capsicum* sp. in Honduras (unpubl. data). Initially placed in the genus *Gnorimoschema* by Bradley & Polovný (1965), the species was transferred to the genus *Symmetrischema* by Polovný (1967). Earlier it had been confused with, and identified as, *Gnorimoschema gudmanella* (Walsingham); many of the earlier references to its status and records of its natural enemies appear in the literature under that name. In the Caribbean, Parasram (1973) and des Vignes (1978) reported flower-bud drop of 40 to 100% as the result of attack by *S. capsicum*.

This insect was first reported from Florida in 1944 and from Texas in 1945 (Anand 1945). Schuster (1960) reported 70-100% bud damage, seasonally, in the Rio

TABLE 1. PARASITES RECORDED FROM *SYMMETRISCHEMA CAPSICA*.

Family	Genus and Species	Stage	Distr.	Ref. <sup>1</sup>
Encyrtidae	<i>Apsilophrys capsicum</i> (Burks)	egg/lar.	Trinidad P. Rico	2
Braconidae	<i>Agathis</i> sp.	larval	Trinidad	2
	<i>Bracon</i> sp.	larval	Trinidad	2
	<i>Chelonus phthorimaeae</i> Gahan	egg/lar.	Texas	3
	<i>Chelonus</i> sp.	egg/lar.	P. Rico	2
	<i>Orgilus capsicolae</i> Mues.	larval	Texas	3
	<i>Pseudapanteles dignus</i> (Mues.)	larval	Trinidad P. Rico Florida	1 2 4
Bethylidae	<i>Perisierola</i> sp.	larval	Trinidad	2
Eulophidae	<i>Euderus</i> sp.	larval	Trinidad P. Rico	1 2
	<i>Euderus</i> ? <i>purpureus</i> Yosh.	larval	Florida	4
	Genus & sp. indet.	larval	Montserrat	1

<sup>1</sup>Ref. = Reference: 1 = Parasram 1973; 2 = des Vignes 1978 & 1981; 3 = Schuster 1960; 4 = current study.

Grande Valley, Texas. Currently, in Florida, pepper bud-moth is not a pest of commercial peppers; possibly it is controlled by the pesticides applied against pepper weevil and beet armyworm (D. J. Schuster pers. comm.).

Des Vignes (1978 & 1981) reported on studies of parasites of *S. capsica* which he undertook in Trinidad, whereas, the only report of parasites in the USA appears to be that given by Schuster (1960) (see Table 1).

In May 1985, while surveying for natural enemies of *Parlatoria ziziphi* (Lucas) in the "Little Haiti" section of Miami, I collected flower buds of *Capsicum minima* L. infested by *S. capsica* (identity confirmed by John Heppner) and reared two species of parasites. I made further collections on subsequent surveys from June 1986 to July 1987 and assessed the level of attack and the occurrence of parasites. The data obtained from these collections are given in Table 2. Only the braconid *Pseudapanteles dignus* (Mues.) (formerly *Apanteles dignus*) and the eulophid *Euderus* sp. (possibly *E. purpureus* Yoshimoto) were reared. *P. dignus* has been reared from this host in the Caribbean and from several other gelechiid moths in the USA; among the latter are records from Florida (Marsh 1979). Because of the uncertainty of its specific identity, it is not possible to give the distribution of *E. ?purpureus*. Specimens identified as *Euderus* sp. are known to attack pepper bud-moth in Puerto Rico and Trinidad (des Vignes 1978, 1981). Records of parasites of *S. capsica*, including those from the current survey, are given in Table 1. In Florida, only two parasites have been reared from *S. capsica*, in contrast to Trinidad where des Vignes (1981), during a two-year study, recorded 6 species. It is probable that a more extensive survey in Florida would contribute new parasite records.

I greatly appreciate the determinations of the parasitoid species by P. M. Marsh (Braconidae) and M. E. Schauff (Eulophidae), and of the pepper flower-bud moth by J. Heppner.

TABLE 2. PARASITISM OF *S. CAPSICA* IN PEPPER FLOWER-BUDS COLLECTED AT "LITTLE HAITI", MIAMI, JUNE 1986-JULY 1987.

Date	Buds Collected	Buds Attacked	Buds with Larvae	Unparasitized Larvae	Parasitized by			% Parasitized
					Pseudapanteles	Euderus		
86.06.28	46	45	33	21	—	—	12	36.4
86.07.21	54	32	18	18	—	—	—	—
86.09.24	53	18	07	07	—	—	—	—
87.01.27	20	08	03	03	—	—	—	—
87.04.27	63	53	23	13	—	2	8	43.5
87.05.28	57	55	44	35	—	1	8	20.5
87.06.22	48	45	23	11	—	4	8	52.1
87.07.28	45	28	05	05	—	—	—	—
Total				113	7	7	36	27.6

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## SUMMARY

Parasites of the pepper flower-bud moth *Symmetrischema capsica* (Bradley & Polovný), (Lepidoptera: Gelechiidae) are reported from Florida for the first time. Combined parasitism by the braconid *Pseudapanteles dignus* (Mues.), and the eulophid *Euderus ?purpureus* Yoshimoto as high as 52.1% (average 28.6%) was recorded.

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