

A NOTE ON THE ROLE OF *EURYTOMA PALLIDISCAPUS* CAM.
(EURYTOMIDAE : HYMENOPTERA)

Although the association of *Eurytoma pallidiscapus* Cam. (Eurytomidae) with lac insect has long been known (Cameron, 1913; Imms and Chatterjee, 1915), there exists a considerable cleavage of opinion about its exact role in the control of predators attacking lac insect, *Kerria lacca* Kerr. Mahdihassan (1929) reported it as a pupal parasite of *Holcocera pulverea* Meyr. in South India. Also, Ferrière (1935) reported *E. pallidiscapus* as a parasite of *H. pulverea*, but did not state clearly whether it is a larval or pupal parasite. Glover (1934) recorded it as an endoparasite of the pupa of *H. pulverea*. Negi *et al.* (1945) reported *Eurytoma* sp. (very near to *E. pallidiscapus*) as a hyper-parasite of *Apanteles tachardiae* Cam. and *Pristomerus sulci* Mahd and Kolub (misidentified as *testaceicollis*) parasite of *H. pulverea*. They also classed *E. pallidiscapus* as one of the beneficial insects indicating it as an endo-parasite of *H. pulverea* larva. Narayanan (1962) has also listed it as a larval parasite of *H. pulverea*. In view of this, it was considered necessary to ascertain the exact biological activity of the parasite for its utilisation in combating the menace of lac insect predators and the findings based on the study of its biology, are incorporated herein.

Initially the adult parasites were reared in the laboratory from the material (parasitised pupae of *H. pulverea*) collected from the orchard attached to the institute. The parasites, in pairs, were caged in petridishes, offered raisin as food and pupae of *H. pulverea*, *Eublemma amabilis* Moore. and *Corcyra cephalonica* Staint. parasitised by *Brachymeria tachardiae* Cam. (a primary pupal endoparasite of *H. pulverea*), in a separate oviposition cages, as hosts. Similarly, larvae of *H. pulverea*, *E. amabilis* and *C. cephalonica* paralysed by *Microbracon hebator* Say, and *Perisierola pulveriae* Kurian were also offered as hosts.

The parasite was found equally effective on the larva of *H. pulverea*, *E. amabilis* and *C. cephalonica* paralysed by *M. hebator* and *P. pulveriae* as well as on the pupae of *E. amabilis*, *H. pulverea* and *C. cephalonica* parasitised by *B. tachardiae*. It lays egg on the larva of *B. tachardiae* inside the pupa of hosts offered. The parasite was thus not specific to any of these hosts as offered under laboratory conditions (temperature 27.9°C and 80.1 per cent relative humidity) although the parasite showed some preference for 2-4 day old larvae of *B. tachardiae* for oviposition when it behaves as a secondary parasite.

It is interesting to note that *E. pallidiscapus* cannot parasitise its hosts, but selects hosts (either pupa or larva) only when they are parasitised by *B. tachardiae* or paralysed by *M. hebator* and *P. pulveriae*. It is thus apparent that they have some innate capacity to locate the developing larvae of *B. tachardiae* inside the pupae for its oviposition.

The parasite continues to breed throughout the year on the pupa of only *H. pulverea* parasitised by *B. tachardiae* under field conditions. The parasite is significant by its absence during the month of December, probably due to the interference of severe winter. Evaluation of data (Table 1) collected reveals that under field conditions the parasite does not occur either on the pupa of *E. amabilis* or on the larva of *H. pulverea* and *E. amabilis*.

Table 1. Incidence of *E. pallidiscapus* on the larva and pupa of *H. pulverea* and *E. amabilis* in different months

Month of Collection	Number of <i>H. pulverea</i>		Number of <i>E. pallidiscapus</i> emerged from		Number of <i>E. amabilis</i>		Number of <i>E. pallidiscapus</i> emerged from	
	Larva	Pupa	Larva	Pupa	Larva	Pupa	Larva	Pupa
1961—June	45	25	—	3	52	21	—	—
July	61	34	—	2	66	23	—	—
August	65	25	—	2	49	24	—	—
Sept.	48	28	—	3	42	27	—	—
Oct.	32	24	—	2	44	27	—	—
Nov.	25	15	—	2	32	18	—	—
Dec.	22	13	—	—	36	15	—	—
1962—Jan.	15	12	—	2	16	10	—	—
Feb.	35	26	—	2	25	14	—	—
March	32	12	—	2	22	11	—	—
April	28	20	—	3	27	21	—	—
May	36	13	—	3	39	18	—	—
June	62	26	—	3	48	11	—	—

From the foregoing account it may be concluded that *E. pallidiscapus* is primarily a secondary parasite of *H. pulverea* pupa (through *B. tachardiae*) and occurs in small numbers under field condition. Therefore, the parasite does not appear to have any significant utility as a controlling agent for the lac insect predators.

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