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Record of a Hyperparasitoid and Two Predators on *Epiricania melanoleuca* in Maharashtra.

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Attempts to colonise *Epiricania melanoleuca* (Fletcher), an ectoparasitoid of *Pyrilla perpusilla* (Walker) are being made around Kopergaon, Shrirampur Taluka, Sangamner and Rahuri areas since the inception of the biological control sub centre of the Indian Institute of Sugarcane Research, Lucknow at Pravara Nagar in 1978.

After successful establishment of the parasitoid in one locality, it was redistributed to other endemic areas in the region. In order to see the fate of the parasitoid in the new habitat, periodic observations were recorded on the prevalence of secondary parasitoids and predators attacking the introduced parasitoid. During the course of these investigations, a hyperparasitoid and two predators were recorded on *E. melanoleuca* in different localities (Table 1).

Table 1. Hyperparasitoid and predators of *E. melanoleuca* in Maharashtra

Natural enemy	Nature of association	Locality	Date of occurrence
Ecthrodryinus sp.	Parasitic	Ravalgaon	11.6.82
		Ashvi	29.9.84
Chrysopa sp.	Predatory	Dadh	20.8.84
		Gangapur	20.8.84
Apines basignata F.	Predatory	Ashvi	10.9.84

Ecthrodryinus sp.

From *E. melanoleuca* cocoons collected from Ashvi and Ravalgaon areas, the secondary parasitoid *Echthrodryinus* emerged. To further confirm its nature, freshly formed cocoons of *E. melanoleuca* were provided to freshly emerged adults of the secondary parasitoid in tubes (15 x 2.5 cm). The cocoons were kept under observation in the laboratory (temperature 27 ± 1°C and relative humidity 70 ± 5%). From a single cocoon, 11 to 12 adults of the secondary parasitoid emerged in 17-18 days. The sex ratio (Male: female) of the emerging adults was observed to be 1:3. The males were smaller in size than the females and were short-lived (1 day) and mated with more than two females. Female oviposited on one cocoon only which lasted for 2-3 h ($\bar{X}$ 2.7 h, n = 10). After completion of its life cycle, the parasitoid emerged through a small round hole.

Ecthrodryinus sp. was recorded in Ravalgaon and Ashvi areas only. The other hyperparasitoid recorded from Uttar Pradesh was *Ooencyrtus* sp. by (Yadav and Sharma, 1977). Thus, the occurrence of *Ecthrodryinus* on *E. melanoleuca* happens to be a new record. Since *E. melanoleuca* is an introduced biocontrol agent in the area, it is interesting to record a new hyperparasitoid so early. There appears to be a need for collecting the original host of *Ecthrodryinus* sp., in this region. For redistribution of *E. melanoleuca* in the different areas in this region, only egg masses should be used to prevent the spread of the hyperparasitoid.

Chrysopa sp.

It is a polyphagous predator and its third instar larva was found feeding on fresh cocoons of *E. melanoleuca*. The egg, larval and pupal stages of the predator lasted for 5 - 8 ($\bar{X}$ = 6.5), 8 - 12 ($\bar{X}$=10.9) and 7 - 9 ($\bar{X}$=8.02) days respectively. The life cycle of the predator was completed in 20 to 29 ($\bar{X}$=27) days. An egg mass consisted of 10 - 26 eggs. In the absence of suitable stage of *Pyrilla* within its reach, the available *E. melanoleuca* cocoon was probably used as an alternative host by the predator. Thus, the record of *Chrysopa* sp. predating on *E. melanoleuca* may be an incidental one.

Apines basignata

This predatory bug recorded as a predator of *Pyrilla* was sucking the body fluid of pupae of *E. melanoleuca*. A bug was observed sucking body fluid from 5-6 cocoons of *E. melanoleuca*. Eggs of *A. basignata* were laid on the upper surface of sugarcane leaves. An egg mass consisted on an average

of 11.5 eggs. The egg and nymphal periods on an average lasted for 6.4 and 21.8 days repectively. The adult bug lived for 9 to 25 days under laboratory conditions. First instar nymph of the bug fed on honey dew secreted by nymphs and adults of *Pyrilla*.

The above mentioned hyperparasitoid and predators on *E. melanoleuca* have not been observed affecting the propagation of the latter, and as such they appear to be of minor importance. However, a close watch has to be kept on the build up of these parasitoid and predators in the area, wherever introduction and redistribution of *E. melanoleuca* against *Pyrilla* is being undertaken in Maharashtra region.

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KEY WORDS : *Epiricania melanoleuca*, **hyperparasitoid and predators**

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