

SOME FIELD OBSERVATIONS ON A LEPIDOPTEROUS PEST  
*METANASTRIA HYRTACA* CRAMER  
(FAMILY LASIOCAMPIDAE)

*Metanastria hyrtaca* Cramer, a lasiocampid moth, is typically nocturnal both in respect of its adult as well as immature stages. During a course of general field studies on pests of Jaman tree *Syzygium cumini* (Linn.) Skeels (Syn. *Eugenia jambolana* Lamk.) in late June, 1984, it was observed that a large number of caterpillars (over a hundred in numbers) and later identified as belonging to this species, had been forming a gregarious assemblage on the tree trunk at about two feet from the ground level. The place of assemblage invariably changed everyday from as close as two feet to about five feet from the ground level. However, later in the next generation the caterpillars were found to congregate upto as high as ten feet from the ground level.

The first group contained caterpillars as small as two cm long and one-third cm wide and as big as seven cm long and one cm wide. Since the emergence of the first-stage larvae has not been observed, the author is not aware of the measurements of the smallest caterpillar of the group in this species, but obviously the larger ones belonged to the late-larval stages, as the process of pupation among the caterpillars started around first week of July, 1984 and continued till the first week of August, 1984.

It was interesting to observe that all the caterpillars remained inactive, almost motionless, throughout the day. It may be mentioned here that almost all the caterpillars had their head pointing downwards. After about 20-25 minutes of sunset and on the progressive increase of darkness caused due to sunset, the caterpillars started showing their activity, generally, by raising their head, moving the same to & fro over the bodies of other caterpillars to arouse them from deep slumber. Sometimes they would raise their posterior half only to discharge a pallet of faecal matter. Within a matter of another 20-30 minutes, nearly all the caterpillars showed some or the other sort of activity. The more developed one turned about 180° and started an upward journey towards natural green foliage of the tree. This was possibly a signal to others which started turning about and followed their leader. It was a sight to see caterpillars marching in a file, singly or in twos and threes, led by a single well-developed one at the head of the march, or interrupted by the ones which crawled for some distance only to descend in search of some place for pupation.

In the first instance when the observations were made, it took nearly 30-40 minutes for the last larva to leave its place of rest.

These caterpillars continued to remain in an upper part of the tree containing green foliage and came down well before sunrise, for rest throughout the day and continue to remain in this temporary dormant stage till a little after sunset.

This rhythmic behaviour of caterpillars and their moving in a line, singly or in twos or threes, from the place of rest to foliage and *vice-versa* is not only interesting but is precisely regulated by the onset of dusk and dawn period of the day, since these have never been seen moving about in their daily routine or for the purpose of pupation during day-light. This clearly indicates their nocturnal behaviour.

The number in the group continued to dwindle everyday, since all those which had assembled did not return to their place of nocturnal activity. Of all the caterpillars which had attained maturity, some crawled only a few inches upwards but turned again and started moving downwards and were found moving about restlessly on the road, inside the adjoining houses and bushes. All those which had, fortunately, secured themselves a place, managed to spin a cocoon around themselves and pupated. One such larva pupated on 7th July, 1984, and the adult emerged on 18th July, 1984 and has been deposited in the National Zoological Collections at Zoological Survey of India, Calcutta (3407/H10). On the 31st of July, 1984, it was interesting to note that only a single larva remained which returned to its place of diurnal rest. It continued to stay throughout the day but on the onset of dusk it journeyed upwards but did not go beyond a foot and a half upwards when it turned again, descended and came onto the road in search of a place for pupation. This larva was captured and was allowed to pupate in laboratory. It pupated on 3rd August 1984, and a female emerged on 13th August, 1984, which was subsequently released in the nature, almost at the same place of the tree-trunk where the larva had its last 'Siesta'.

It is not known why some of the caterpillars preferred to come down on to the ground, whether to pupate or in search of an alternative host-plant, when most of the caterpillars moved upwards. It seems certain that all those which had moved upwards did not always return on the following day, obviously by the dwindling number in their group. While some of them pupated up there, others came down on to the ground and possibility of their search for the alternative host-plant seems to be very remote since most of these pupated wherever convenient to them, i. e., on twigs, wire-nettings, in the folds of wall

curtains, corners, etc. It may be mentioned here that their gregarious way of life ended with the completion of larval stage of the life cycle.

Roonwal (1979) made an exhaustive study in another moth, *Lymantria mathura* Moore (Family : Lymantriidae) which occurs all along the Sub-Himalayan areas from Western Uttar Pradesh to Assam, extending farther East to Southeast Asia. The species also showed a similar rhythm regulated by the onset of dusk and dawn period of the day. A detailed field observation, including a mass eruption, has also been made.

The present species is distributed in India (Tamil Nadu ; Maharashtra ; Madhya Pradesh ; Orissa ; Eastern Himalayas and Assam) and Sri Lanka (*Vide* Hampson, 1892 and Fletcher, 1914).

The author is grateful to Dr. B. K. Tikader, Director, Zoological Survey of India, for the facilities provided to him. Thanks are also due to Dr. S. K. Ghosh, Zoologist & Officer-in-Charge, and Mrs. Mridula Majumdar, Lepidoptera Section, for having confirmed the identification.

#### REFERENCES

- FLETCHER, T. B. 1914. *Some South Indian Insects*, xxii+565, pp., Madras.
- HAMPSON, G. F. 1892. *The Fauna of British India including Ceylon and Burma*, 1, xxiii+527 pp., London.
- ROONWAL, M. L. 1979. Field-ecological studies on mass eruption, seasonal life history, nocturnal feeding and activity rhythm, protective behaviour and colouration in the Sal defoliator, *Lymantria mathura* (Lepidoptera : Lymantriidae) in the subhimalayan forests.—*Rec. zool. Surv. India*, 75 (1-4) : 209-236, 7 plates, 3 Text-figs.

*Zoological Survey of India,*  
*Calcutta*

G. S. Arora