

Biology of *Anarsia epotias* Meyr. (Lepidoptera: Gelechiidae)

A SHOOT BORER ON CASHEW IN KERALA

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Caterpillars of *Anarsia epotias* Meyr. were found attacking cashew trees in the Agricultural College Farm, Vellayani, during December-February 1962-'63, causing considerable damage to the tender shoots. This is the first record of the occurrence of this insect as a pest of cashew. Earlier, Fletcher (1921) had reared it out from Tamarix twigs. But no information is available on its biology and the present paper embodies some observations made on this aspect.

For these studies, the insect was reared in hurricane chimneys on fresh tender shoots of cashew whose cut tips were kept dipped in water in tubes.

Oviposition

When supplied with fresh cashew shoots in the laboratory, the moths invariably prefer to lay eggs in the axils of the tender leaves. Eggs are laid either in batches of 10-20 or singly in the leaf axils, the maximum number being laid in the topmost axil. On an average a female moth lays 50-60 eggs under laboratory conditions.

The egg (Fig. 2)

Egg is oval with smooth surface and measures 0.4 mm x 0.2 mm. It is

yellowish orange in colour when freshly laid and turns deep orange as it nears the time of hatching. Incubation period is 3 days in December-February.

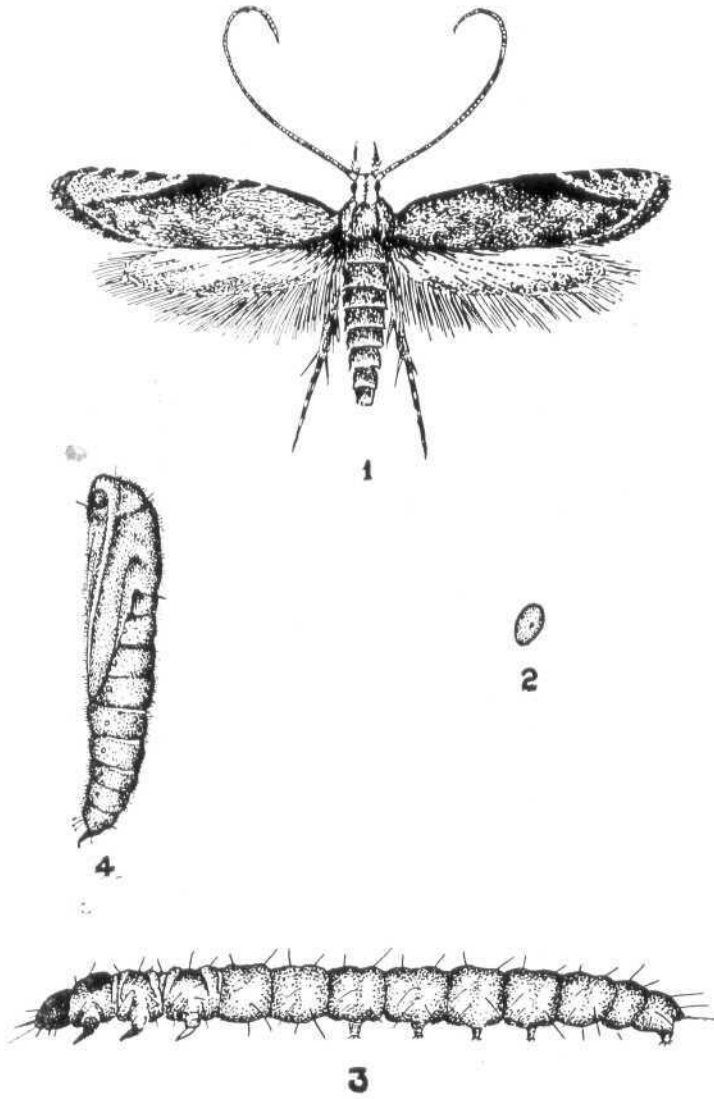
The larva

The newly hatched caterpillar is slender with head broader than the body and orange coloured, the head and prothoracic shield being brown. Body is sparsely clothed with white hairs. The larval period occupies 14-16 days undergoing five instars. The measurement and duration of each instar is given in Table I. As the caterpillar grows from the first instar, the colour gradually changes from orange to yellow and then finally to a dirty white colour with a greenish tinge. The full grown larva (Fig. 3) is 10-11 mm long, almost cylindrical with a prominent black head and prothoracic shield.

TABLE I
Average measurements and duration of different instars of *A. epotias*

Instar	Length mm	Width mm	Duration (days)
I	1	0.2	2
II	2.2	0.4	2
III	3.5	0.6	3
IV	6.0	0.9	4
V	11.0	1.5	4

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Figs. 1—4. 1. *Anarsia epotias* Meyr. Adult
 2. Egg 3. Full-grown caterpillar
 4. Pupa

Larval Habits

The newly emerged caterpillar remains in the leaf axil for sometime and then slowly moves into the folds of the tender unopened leaves. It then starts webbing together by silken threads the two margins of the small leaves and commences feeding by scraping the tissues of the leaf surface. As the caterpillar reaches the 3rd or 4th instar, it bores into the terminal shoot at the tip and tunnels backwards feeding on the internal contents and filling the tunnels with excreta. The caterpillar does not bore to a length of more than 2-3 cm in the stems. A sticky exudation oozes out from the stems injured by the caterpillars. As a result of all these, the attacked shoot stops growth and will in due course die and dry up.

Pupation

Prior to pupation the full grown larva stops feeding, shrinks up a little and turns pink in colour. Pupation taken place inside a loose cocoon made of flimsy white silken threads inside leaf folds or tunneled shoots.

Pupa (Fig. 4)

The pupa, 5.5 mm x 1.5 mm, is slender, broader anteriorly and slightly tapering posteriorly, yellowish brown when newly formed and subsequently becoming deep brown. The body surface is invested with a felt of minute hairs interspersed with sparse long setae. The caudal end bears a number of cremaster spines arranged terminally and ventra-

ly around the anus. The pupal period lasts 7-10 days.

The total life cycle occupies a period of 24-29 days.

Adult (Fig. 1)

Adult is a small, lightly built moth measuring 11-13 mm across stretched wings and 5-7 mm in length. Forewings are light grey in colour with black patches along the margin, and a recurved lighter subapical band. Hind wings are hyaline tinged with grey.

Egg laying commences 2-4 days after emergence of the adult and the adult survives for 7-10 days under laboratory conditions.

Natural Enemies

Two unidentified Hymenopteran parasites were found attacking the caterpillars of the insect.

Acknowledgement

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Reference

1. Fletcher, J. B., (1921) *Ind. Agr. Ent. Mem.* 6: 92-93.