

Some Important Caterpillar Pests of Madras State

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Introduction: Insects, as a group, are more injurious than beneficial to mankind. Imms (1947) has recorded seven lakhs of species of insects of which about ten thousand are known to be injurious, affecting plants and of these about five hundred are major pests.

In South India alone, Ramakrishna Iyer (1932) has recorded under various families, two hundred forms causing considerable damage to the cultivated crops in some form or other. Unlike many other groups, the members of this order, with few rare exceptions, are herbivorous veritable pests during the larval stage. The larval stage is familiarly known as caterpillars. The large majority are external feeders but a good number work unseen inside plant tissue. In a large number of cases, the plant may be disfigured, the foliage reduced considerably or the growth of the plant retarded. Sometimes the evidence of damage is seen in the form of castings on the leaves, bore-holes, scrapings, cut-ends of the leaf, fluffy secretions on the stem and dead hearts.

A few typical South Indian examples of caterpillar pests representing different families under Lepidoptera with brief notes on distribution, characteristic symptoms of damage and diagnostic features indicating also methods of tackling them in plant protection work are given below:

1. *Heliothis armigera*, Hub: This is popularly known as gram caterpillar and is distributed through South India. It is green in colour, stout and measuring $1\frac{1}{2}$ " in length. The mid-dorsal portion has an apparent double blackish line. The dorsolateral region has two brownish bands, thickening at each segment behind thorax and slightly running across in first and eighth segments. The sub-lateral side has a whitish green longitudinal band with black dots as spiracles. Body hairs are short, pale and are seen arising from small cone-shaped fine pale coloured tubercles. Head-region is pale green with black ocelli. The legs are black in some and brown in others. The prolegs are stout at base and slender distally and broad at planta. The larvae show considerable colour variation and are polyphagous in habit.

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It feeds on the inner contents of the pods of red-gram, Bengal gram, tobacco, groundnut and bores into the fruit of tomato and ear heads of *cholam*.

Dusting with 5% BHC. or spraying with 1% BHC gives relief against this pest.

2. *Lepidogma* sp.: This is a new record of a leaf-webber on *Eugenia jambalana* in South India (Ananthanarayanan and Venugopal 1956) and distributed in Coimbatore, Malabar and Madura. The full grown caterpillar is cylindrical, brownish in colour and attains a length of 1". The larvae bear a pair of dark coloured longitudinal stripes, as well as a dark band across the hind border of prothorax. The mid-dorsal area is greenish or pale greenish. The setae are inconspicuous but arise from black warts which are arranged in rows. The five pairs of prolegs are very slender, pale white with crochets arranged in a circle.

The characteristic symptoms of damage is the presence of rolled up leaves and scraping of green matter.

The pest can be effectively tackled by the application of DDT, 5% dust or spraying 1% BHC.

3. *Chilo zonellus*, S.: It has a distribution in Tanjore, Madurai, Ramnad, Tirunelveli, and Coimbatore. The full grown larva is 2" in length with brownish head portion. The body is somewhat transparent with chitinous small plates from which small blackish hairs arise. Body surface is pale whitish with irregular pinkish lines or blotches. Spiracles are black oval spots. Prolegs are light pink in colour with complete circle of crochets.

In the earlier stages the pest causes the wilting of central shoots of *cholam* as evidenced by the presence of dead hearts.

Spraying of 1% BHC. at periodic intervals may act as a deterrent.

4. *Prodenia litura* F. (Fig. 1, 1-a): The worms are nocturnal in their habits, feeding during nights and hiding under the clods during day time. The full grown larva is 1½" in length with a small head region. The body is stout and thickest in the first abdominal segment. General colouration is velvety black dorsally and at sides

and with clean minute yellow spot over thorax. Three longitudinal yellow lines are more distinct in a pale black dorsal median band area, intermixed with numerous white dots. The prolegs have chitinised area at the sides. The planta is thick and fleshy with crochet in a line. Spiracle is oval dark coloured.

It is a serious pest, polyphagous in habit and feeds on a variety of plants such as castor, tobacco, banana, agathi, tomato, cabbage and *ganja*.

Recent investigations have proved that it can be controlled by the application of 5% BHC. dust.

5. *Amsacta albistriga*, W. (Fig. 2, 2-a): This is a serious pest of most of the dry crops in the red soil area and is particularly partial to groundnut. The full grown caterpillar is about 3" in length. The body has a light greenish tinge between segment III and 6. The segments 9 and 10 are light brownish with the base of the tubercles reddish. There is a distinct prothoracic shield. Head, 1st and 8th segments of the body have orange red colour with black ocellar region. The body surface has numerous long and short setae, which are black or whitish. Legs are black. Prolegs 5 pairs are fairly stout at base and slender at tip. The spiracles are inconspicuous and visible under magnification, as thin whitish circular small patches.

It is particularly destructive to groundnut crop which is completely defoliated overnight.

In the younger stages the caterpillar pest can be brought under control by dusting 10% BHC. Fairly full grown caterpillars can be controlled by dusting Toxaphene 20%.

6. *Tarache nitidula*: The caterpillar is very active moving on the plant in a looping manner (Venugopal 1956) and has a distribution in Coimbatore, Tanjore, Madurai. The full grown caterpillar is ashy grey, greenish yellow; green and with dots. The younger stages are brownish with ashy spots or patches. Head is smaller and mottled. The 3rd and 1st segments are of maximum size and appear swollen. The abdominal segments on 2, 3, 4 are smaller. Fleshy projections of blunt elevations on sides and dorsum are noted on segments on 1, 2, 3 and 8. Large number of black dots are seen over yellow green or brownish ashy background. Prolegs are located on 5, 6 and 10th segments with dorsal hump on each segment.

It is effectively controlled by dusting 5% BHC. or DDT.

7. *Hyposidra successaria*. Wlk. (Fig. 4, 4-a): This is a true looper affecting number of crop plants such as *daincha*, castor, sugarcane, sweet potato, *Eugenia jambolana* and mango. It belongs to the family Geometridae and the family is popularly known as span worms or measuring worms (Cherian and Rangiah Pillai 1938).

The full grown larva attains a length of $2\frac{1}{2}$ ' with pinkish or brick red colour. The transverse band formed by white linear spot persists with brownish or brick red patches at the sides. Paired brown dots are prominent dorsally on 2nd and 5th abdominal segments. The body is stout, cylindrical and its surface smooth and devoid of tubercles. The setae barely seen at the sides, are in the form of very thin and short hairs. The head region is smaller, shining, smooth and faintly marked with mottlings and black ocelli. Legs are dark brown and prolegs stout and strong to support the body of the substratum.

The crop is ultimately defoliated if the larva is allowed to do the damage unchecked.

Recent investigations have shown that BHC. or DDT. 5% dust completely eradicates the pest.

8. *Parasa lepida*, Gram: It has a wide distribution in Coimbatore, West Coast, Madurai, Trichinopoly and Madras. The full grown caterpillar is about an inch in length with stout body. It has 4 rows of spiny ocelli placed laterally and dorsally. The ventral surface is flat and fleshy. The colouration is white on the ventral surface and greenish above. The spines on the scoli are numerous tipped red or black and they cause irritation and pain by glandular secretion. The young caterpillars feed gregariously on the lower surface of the tender leaves scraping the green matter and causing drying up of the foliage. As the caterpillars grow in size, they scatter themselves and start feeding on the entire leaves. Badly affected castor plants bear only skeletonised leaves, the entire leaf blade being reduced to the mid-rib and a few veins.

The full grown caterpillars can be controlled by spraying BHC. 1% wettable powder.

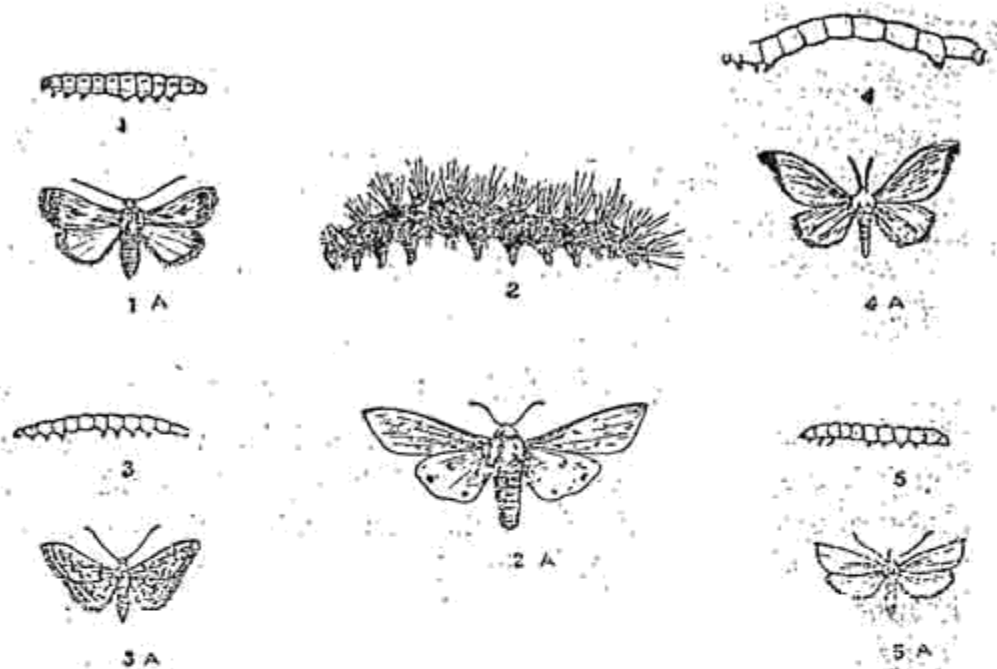


Fig. 1, 1 - A Caterpillar and adult moth of *Prodenia litura*, F.
 Fig. 2, 2 - A Caterpillar and adult moth of *Amsacta albiatrigo*, W.
 Fig. 3, 3 - A Caterpillar and adult moth of *Chilo zonellus*.
 Fig. 4, 4 - A Caterpillar and adult moth of *Hyposidra successaria*, Wlk.
 Fig. 5, 5 - A Caterpillar and adult moth of *Lepidogma*, sp.

REFERENCES

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| Ananthanarayanan, K. P. and Venugopal, S. | 1955 "Notes on a new pest, <i>Lepidogma</i> sp., (Pyralidae) on <i>Eugenia jambolana</i> in Coimbatore." Ind. J. Ent. 17 (2); 183—185. |
| Cherian, M. C. and Rangiah Pillai, B. | 1938 Madras Agric. J. 26 : 166. |
| Imms, A. D. | 1947 <i>A general text book of Entomology</i> , Methuen & Co., London. |
| Ramakrishna Iyer, T. V. | 1932 Madras Agric. Bull 27, 82—87. |
| Venugopal, S. | 1956 <i>Tarache nitidula</i> F. a semilooper pest on cotton in South India" J. Bomb. nat. Hist. Soc. 54, 207—210. |