



## Leaf eating caterpillar - a menace to coconut cultivation

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**The leaf eating caterpillar causes severe damage to palms in coastal and backwater areas and in certain internal pockets of peninsular India. In addition to coconut, they are known to feed on palmyrah, talipot palm, wild date, ornamental palm and banana.**

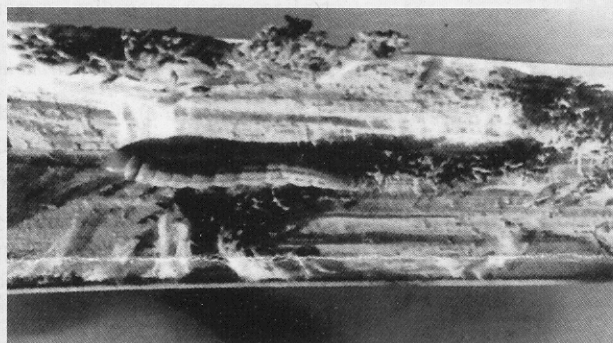
The leaf eating caterpillar, *Opisina arenosella* Wlk. (Oecophoridae : Lepidoptera) becomes a sporadic pest in some parts of the country under ideal conditions. In India, the occurrence of leaf eating caterpillar, *Opisina arenosella* was rare prior to 1920, but in later years, it assumes the proportion of a major pest and causes severe damage to palms in coastal and backwater areas and in certain internal pockets of peninsular India. In addition to coconut, they are known to feed on palmyrah, talipot palm, wild date, ornamental palm and banana.

In India its occurrence is more in Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Orissa, West Bengal and Gujarat. The pest occurs round the year with a spike in population during summer (March - May). Under favourable conditions the sporadic outbreaks lead to severe damage in coconut plantations.

In severe outbreaks, the older leaves of the palms are reduced to dead brown tissue and only three or four

youngest leaves at the center of the crown remain green. In the year following the outbreak the crop may be reduced to half. The larvae are harbored in the lower surface of leaflets in galleries made of excreta and silken web. It gregariously feeds on chlorophyll containing parenchymatous tissues reducing the photosynthetic efficiency considerably.

Eggs are oval, creamy white, 0.6 to 0.7 mm long and 0.3 to 0.4 mm wide. The eggs are laid distally on the lower surface of the leaflet near the old gallery. The egg period is five days. The larvae that hatch from the egg are cylindrical, slightly compressed with a tapering hind end. The larval period lasts for 42 days with eight instars including the pre pupal stage. The fully-grown larva is about 15 mm long, light green with reddish brown



*The caterpillar*



Coconut garden affected by leaf eating caterpillar

stripes. There are three longitudinal stripes that run dorsally, one median and two laterals. The head is brown to black and curved inwards. Pupation occurs in the silken cocoon in the larval gallery. The pupa is light to dark brown, somewhat flattened dorsoventrally, anterior end blunt and posterior end tapering.

The adult emerges from the pupa after 12 days. Adult is a medium

sized moth; female 10-15 mm long and 20 - 25 mm wide (wing expanded); male slightly smaller in size. Head and thorax are light grayish ochraceous in color; forewings elongated with finely scattered blackish scales; female abdomen stout and pointed at the tip. Abdomen in male is slender, ending in a short brush or scales and with a conspicuous tuft of hairs at the base of hind wing. The longevity

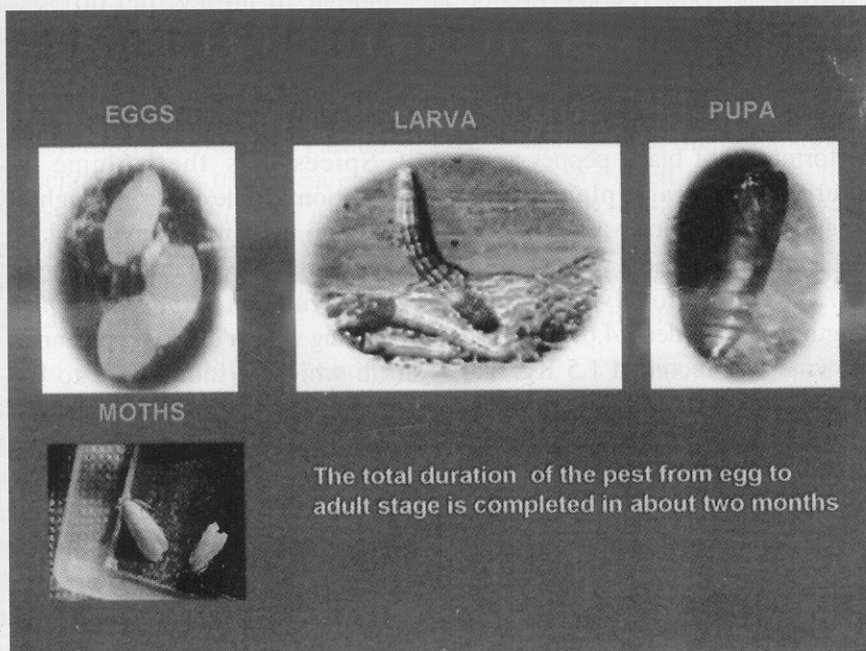
is five days for females and seven days for males. The life cycle from egg to adult is completed in two months.

### Management

The pest is best managed if integrated management practices are followed. Cutting and burning the heavily affected and dried outer most 2-3 leaves helps to prevent the spread of the pest.

During sporadic outbreaks the pest can be kept under check by spraying dichlorvos 0.02% or malathion / phosalone each at 0.05%.

Though chemical control has been used by a section of farmers majority of them have problem in implementing this technology as the target area to be sprayed in some cases may be 20 - 40 feet above the ground level. This problem is solved by the use of bioagents. Release of parasitoids is fixed based on the target stage of the host present at the time of observation. Release is to be carried out at fortnightly intervals. Release bethylid, *Goniozus nephantidis* for third larval stage or above; Elasmid, *Elasmus nephantidis* for pre pupal stage and Chalcid, *Brachymeria nosatoi* for early pupal stage. Larval parasitoid, *Bracon hebator* and pupal parasitoid *Xanthopimpla punctata* are promising parasitoids. Combined release of the parasitoids is required in multistage condition of the pest. When an insecticide treatment is given, the release of parasitoids is to be done only after three weeks of spraying.



Life stages of *Opisina arenosella*