

Infested palm showing damage to leaves, nuts, etc.

## SLUG CATERPILLAR A SPORADIC PEST OF COCONUT

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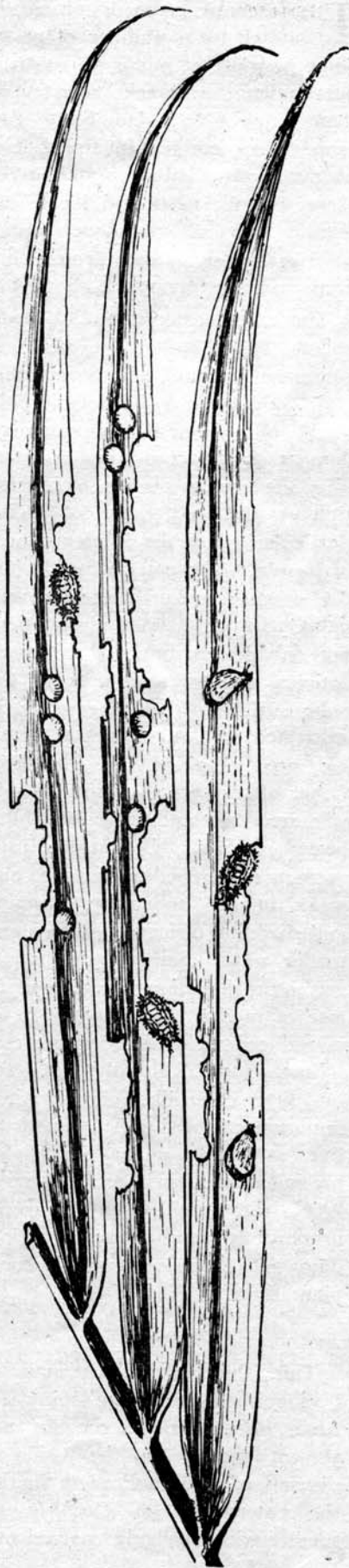
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THE coconut palm is prone to attack by a number of pests. Some pests are of minor importance but epidemic outbreaks of a few of these cause severe damage to the crop. The coconut cultivator should always keep vigilant watch over these sporadic pests and locate infestation so as to adopt timely control measures and protect his crop from the ravages of the pest.

The slug caterpillar, *Contheyla rotunda*, Hampson, is one such important occasional pest of coconut palm. Sporadic and epidemic outbreak of the pest and extensive damage to the crop were reported from the various pockets of infestation on the west coast of India, particularly from the different places of Kerala. The caterpillars devour the green lamina of the coconut palm. In very severe infestations not only leaves, but also the green petioles, spathes and nuts of the palms and even the foliage of intercultivated crops like plantain, grass, etc. are eaten up and damaged. Other alternate host plants include wild arrowroot and tea-bushes. After heavy outbreaks, the entire garden presents a scorched appearance and result in the premature drooping and shedding of leaves, buttons and tender nuts. Severe defoliation, premature nut fall and decrease in the rate of production of spathe result in reduced yield up to 75 per cent (Nirula, 1954). Usually the attack by these caterpillars is of minor importance and goes unnoticed. But at times under inadequate biological and environmental regulation they multiply in enormous proportions and cause serious damage to extensive areas of coconut plantations.

### Description

This slug caterpillar may be distinguished from the spiny slug *Macroleptera nararia*, a coconut pest present mainly in the Godavari districts of Andhra Pradesh in that the caterpillars of *Contheyla* are smaller with the body covered over



Portion of leaf showing the damage done and the pest *in situ*

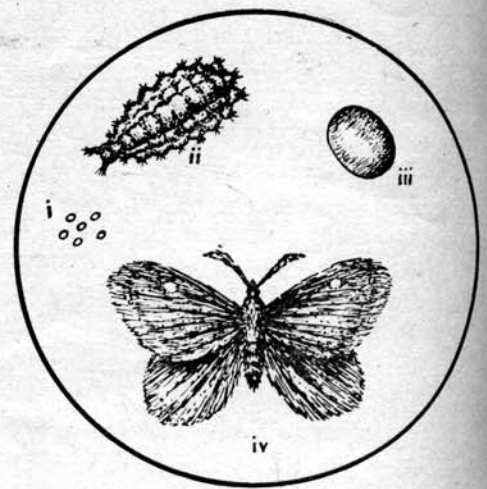
with spines and two narrow grey stripes on the dorsal side while those of *Macroleptera* are yellowish-green on the dorsal and pinkish on the ventral aspects with a series of red-tipped tubercles with very short spines. The adults of the former are small and greyish brown to dark grey in colour and in the latter they are pale brownish-ochre coloured with the forewing red at the base and brown on the border.

Total duration of the life-cycle of *Contheyla* varies from 40-68 days with an incubation period of 3-6, larval period of 27-48 and pupal period of 10-14 days. Adults live for about 3-7 days and a single female lays 62 to 324 eggs in its life time.

Cutting and burning the badly infested leaves which are rendered non-functional is the method usually adopted for the control of the pest. In nature the pest is subject to the attack of certain parasites viz., the braconid *Rogas* sp. the chalcid *Antrocephalus* sp. and the chrysid *Chrysis* sp. Besides, certain bacterial and fungal pathogens infect the caterpillars during the rainy seasons.

Spraying the infested palms with insecticides such as lead arsenate and DDT controls the pest infestation in the field. Laboratory trials conducted at the Central Plantation Crops Research Institute, Regional Station, Kayangulam also revealed that the chlorinated hydrocarbons DDT and BHC and the carbamate, carbaryl (Sevin) are effective in the control of the caterpillars.

These three insecticides viz., 0.1 per cent DDT, 0.1 per cent BHC and 0.05 per cent carbaryl were tried in the field. Cultivator's gardens in a heavily infested tract at Thottappally (Alleppey Dist. Kerala) were selected for the conduct of these studies in 1969. Ten per cent sample palms out of a



Life cycle—egg, larva, pupa and adult

total of 3000 experimental palms were observed every month for assessing the population of different stages of the pest present on the leaves. Six rounds of sprayings were done at monthly intervals. The initial population estimated was 4255, 6877 and 3080 pests respectively on DDT, BHC and carbaryl treated palms. After three sprayings the pest subsided and after six months the population was 65.51 and 55 respectively for DDT, BHC and carbaryl i.e. the population came down to 1.5, 0.7 and 1.8 per cent of initial population. All the three insecticides tested were found equally effective in the control of the pest.

The quantity and cost of insecticide required for 100 palms works out to 450 g, 450 g and 225 g (all 50 per cent wettable powders in 225 litres of water) and Rs 2.50, Rs 0.90 and Rs 2.84 respectively, per treatment for DDT, BHC and carbaryl.

*Recommendations.* Among the insecticides tested BHC at 0.1 per cent concentration is effective and economical and hence recommended for large scale control operations against the slug caterpillar pest in the field. In cases of severe pest outbreaks monthly insecticidal spraying is necessary and the same has to be continued till the pest population subsides and is brought down below the level of economic injury.