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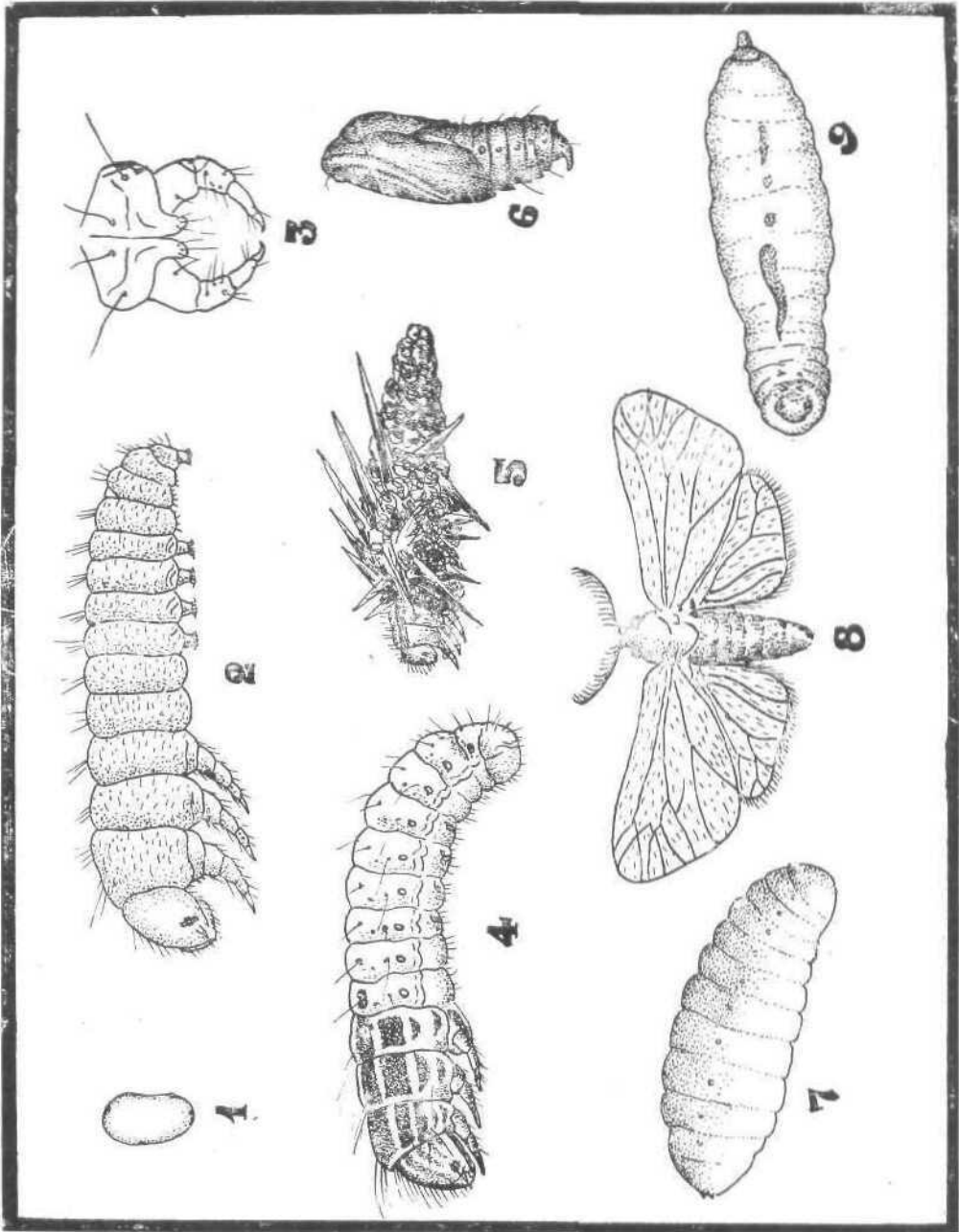
**NOTE ON THE BIOLOGY OF ACANTHOPSYCHE MINIMA
HMPS. (PSYCHIDAE) A PEST OF PLANTAIN**

Acanthopsyche minima Hmp. is noted for the first time as a pest of plantain in Kerala. The caterpillars appear in large numbers and feed on the leaves. No information is available on the biology of *A. minima*, and hence it was studied in detail and the findings are presented in this note.

Eggs are laid inside the pupal case since the female moth is contained within it. They are packed neatly within the pupal skin, filling the interstices with the soft hairs. As the posterior end of the pupal case is filled and packed with more and more eggs, the moth shrinks correspondingly. The spent moth extricates itself from the pupal case and falls down through the posterior opening of the bag. A single moth lays 150 to 200 eggs.

Yellowish white, cylindrical with both ends rounded or broadly oval measuring 0.6 to 0.7 mm long and 0.35 mm broad (Fig. 1). It is enclosed within a transparent silken, cocoon-like capsule which is formed by the soft downy hairs of the moth. Egg chorion smooth, membraneous and transparent. Incubation period varies from 9 to 10 days. After the eggs hatch about the same time, the caterpillars emerging out of the bag in a swarm.

Newly hatched caterpillar (Fig. 2) yellowish white and 1.5 to 1.8 mm long. Head globular with distinct 'Y' - shaped epicranial suture. Pronotum and mesonotum are single plates extending to the sides of the corresponding segments. The coxa of the thoracic leg is large, broad at base and narrow distally. The two coxae of a pair are closely apposed together medially. The anterior median corner of each coxa is produced into a finger-like projection carrying three long hairs. The stout and united coxae form a strong base which projects forwards holding the pair of legs at its end (Fig. 3). The abdomen is nearly cylindrical with distinct segmentation. *Full grown caterpillar* cylindrical and 1.1 cm long, Head yellow with dark brown or black spots, the spots joining together and forming stripes laterally. Prothoracic shield yellowish brown with eight longitudinal stripes dorsally. Meso and metathorax have six continuous stripes dorsally, all of them being black in colour. The larval duration of the female moth varies from 55 to 78 days and that of the male ranges from 45 to 61 days. The newly emerged caterpillar constructs a bag for it, (Fig. 5) out of bits of plantain leaf or any other suitable material at hand. At first the small extraneous particles are stuck together with the secretion of the labial glands forming a ring around the caterpillar. More and more particles are added on to the rim of this ring



Life stages of *A. minima*

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|----------------|---------------------------|--------------------|
| 1. Egg | 4. Full grown caterpillar | 7. Female pupa |
| 2. Caterpillar | 5. Caterpillar in case | 8. Adult male moth |
| 3. Legs | 6. Male pupa | 9. Female moth |

thus increasing the length of the case. When a full-grown caterpillar was taken out from its bag, it built a new home for it, out of the bits cut out from the leaves supplied to it. The caterpillar feeds in the beginning by scraping the green matter from the leaves, but later on it feeds on the entire thickness of the leaf thus making holes on it. On an average the final instar larva consumes 0.43 sq. inch of leaf in 24 hours. The full grown caterpillar retracts itself to the bag and closes the anterior opening with silk. Then it reverses its position inside the bag, in such a manner that the head portion lies at the posterior end of the bag. A period of quiescence extending from 4 to 7 days follows. Then it moults into the pupa. The male pupa (Fig. 6) is of the typical obdect type. It is light brown and elongated measuring 4.5 mm long and 1.7 mm broad. At the end of the pupal period, the pupa moves down to the lower opening of the bag. Pupal period lasts for 9 to 11 days. The female pupa (Fig. 7) resembles a coarctate, dipteran puparium measuring 5.5 mm long and 2.5 mm broad. It is pale, yellowish brown, elongated and tapering towards both ends, the posterior end being slightly broader than the anterior end. The female pupa lasts for 7 days. The female moth remains inside the bag even after emergence from the pupa. Emergence is indicated by a split occurring at the head end of the pupa and the head and thorax of the moth alone come out of the pupal case.

Male moth (Fig. 8) slender, winged and 4 mm long. Antennae bipectinate to their tips. Fore wings hyaline with the outer margin transparent. Hind wings uniformly hyaline bearing long white setae. Longevity of the moth is 5 to 6 days.

The female moth (Fig. 9) light yellow, elongated and maggot-like tapering gradually towards the two ends and measuring 6.7 mm long and 1.8 mm broad. The longevity of the female varies from 11 to 13 days.

സംഗ്രഹം

'അക്കാൻതോസൈക്കൈ filamentis' എന്ന കീടം കോളത്തിൽ ചില കാലങ്ങളിൽ വാഴയില തിന്മ നശിപ്പിക്കുന്നതായി കാണപ്പെട്ടു. ഇവ വാഴ നശിപ്പിക്കുന്നതായി മുമ്പ് കാണപ്പെട്ടിട്ടില്ലാത്തതിനാൽ ഈ കീടത്തിന്റെ ജീവിതദശകളെ കുറിച്ചു വിശദമായ ഒരു പഠനം നടത്തുകയും അതിന്റെ വിവരണം ഈ ലേഖനത്തിൽ ഉൾക്കൊള്ളിക്കുകയും ചെയ്തിരിക്കുന്നു.

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