

Study on the bionomics of a coccid pest, *Droschia mangiferae* green and its taxonomic Status

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Abstract: The bionomics of a coccid pest *Droschia mangiferae* Green (Mealy bug) infesting the economic plants such as Mango, Guava and Lemon in seven areas of North-East parts of Bihar has been studied and observations obtained in relation to its stages of life cycle along with the nature of damaged caused by the coccid pest are presented in this paper.

(Keywords: Bionomics, coccid pest, *Droschia mangiferae*)

Introduction

The male and female mealy bug (coccid pest, *Droschia mangiferae* Green) copulate during the months of March to May and after 15 female crawl down along the tree trunk to the ground and lays eggs in the soil at the depth of 8 to 10 cm.

in cluster¹⁻⁸. The female lays eggs of about 300-400 in number which remained enclosed in a sac like pouch of somewhat silken material. Eggs are almost rounded in shape, whitish in colour and greater than 0.4 +0.001 in diameter and size⁹⁻¹⁵.

Nymph:

The newly hatched nymphs have been found crawling up the host tree trunk. The nymphs are red in colour. The first instar nymphs have no sex differentiation. The newly hatched nymphs are 1 mm long and moult in the month of January about two months after the hatching. Later on the basis of length the female and male nymphs get differentiated. The female nymphs are larger than the male.

Newly hatched		Later stages of Nymph		
First instar 1 mm	Colour Red	Female Instar 8±01 mm	Male Instar 6±01 mm	Colour White

Development of female nymph: The second instar nymph moults in the month of March and measures about 8mm long. Initially it is brown in colour and thereafter changes into white colour covered with white powder. The nymphs gradually grow to attain 1 cm. long length. In the meantime nymphs become mature with the development of reproduction organs.¹⁶⁻²³

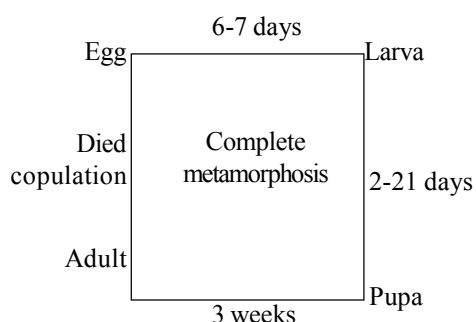
Development of male nymph: In course of observations it was found that the males, after first moulting observe pre pupal and pupal stages.

The pupation takes place in soil on the fallen leaves. The cocoon is formed by waxy thread secreted by nymphs and the pupal period is of about 21 days.

Adult: Sexual dimorphism at this stage is very distinct observed during the months of April to June.

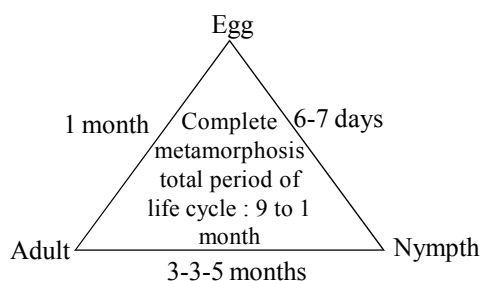
Male: The male is the winged insect having one pair of wings and a very delicate reddish body measuring about 5mm ×

2mm in length and breadth with a wing span of 13 mm. The antennae whoried type and almost black in colour. The life span of male is about a week. It is non feeding having no mouth parts and after copulation dies.



Male coccid life cycle

Female: Female is wingless. It has fleshy flat body with a length of 14-16 mm and breadth of about 8.5 mm. Its body is almost covered with ashed white mealy powder having three pairs of small legs. It has piercing and sucking type of mouthparts. The life span of female moth is up to a month. The total life cycle is completed in 9 to 11 months and only one generation is found in a year.



Female coccid life cycle

- * Female soft scale pest is mobile during all life stages until the production of eggs.
- * In course of infestation female adult pest appear more or less dome shaped and has been found to produce a cottony

elongation on its body, which contains eggs.

Natural enemies of coccid pest :

Many predators and parasitoids have been found to attack the pest in the landscape and keep it below damaging levels. The common natural enemy of this pest is parasitoid the wasps. The pest has been found on host plants after being killed by the natural enemies. Thus the natural enemies disturb the life cycle of coccid pest²⁴⁻³³

Nature of damage

The damage to host plants such as Mango, Guava and Lemon by the coccid pest *Droschia mangiferae* Green (Mealy bug) is caused by the nymphs of both sexes' and female adults which suck the sap from twigs, shoots and flowers and fruits as a result flowers usually dry up and become weak that with the slightest Jerk, the fruits fall down.

The sign and symptoms of a coccid pest (*D.mangiferae*) infestations observed are as follows.

- * Sticky, honeydew covered surface
- * Black sooty mold
- * Leaf chlorosis
- * Premature leaf drops.
- * Falling down of fruits
- * Branch' dieback
- * Plant death

Mode of damage : The distinct feature of the coccid pest is its beak in which the modified mandibles and maxillae form a stylet which is sheathed within the modified labium. The stylet is capable of piercing tissues and sucking liquids from host plants.

- * The diet of the pest is mainly plant sap.
- * The pest dramatically cuts the mass of affected host plant and also moves from one to another host plants of the area at different times of year.
- * Phloem sap which has higher concentration of sugar and nitrogen is relatively creates light pressure on coccid attack than the xylem sap.

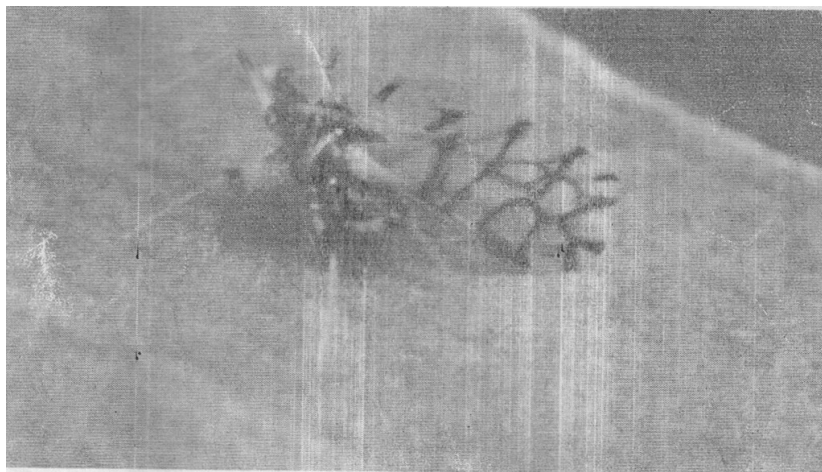


Photo A: Coccid pest (*D. mangiferae* Green) on economic plant

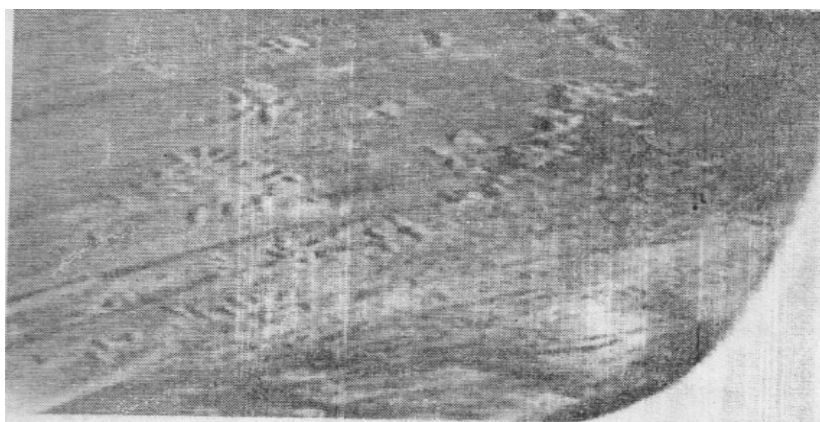


Photo B : Coccid pest (*D. mangiferae* Green) attacking the economic plant in group

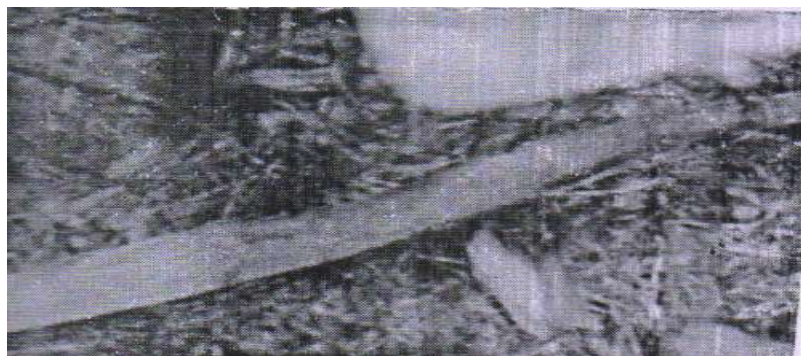


Photo C : Coccid pest damaged Guava plant (dryup)

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