

BENEFICIAL INSECT: LAC INSECT

By

Purnima Das and Priyanka Saikia
Assistant Professor, Research Scholar



Crawlers emerge from brood cell



Microscopic view of Crawlers

LAC INSECTS: Globally, till date 99 species belonging to nine genera have been reported.

- In India, there are 26 species under two genera, viz. *Kerria* and *Paratachardina*
- They secrete a resin, a bio-resource of wide commercial utility.

Scientific Name: *Kerria lecca* (Kerr.) in India
K. chinensis (Mahdi.) in Assam and North East India

Family-Tachardiidae
Super family-Coccoidea
Order-Hemiptera

BY-PRODUCTS AND USES of LAC

- Resin (60-90%)
- Dye (2-10%)
- Wax (6%)

Uses:

Food industries, coating of medicinal pills, cosmetics, paints, inks, automobiles, postal departments, electrical industry, chocolate and candy coating, perfumeries, dye for textile industry, slow-release lac coated urea for controlled release of urea etc.

Host Plants of Lac Insect

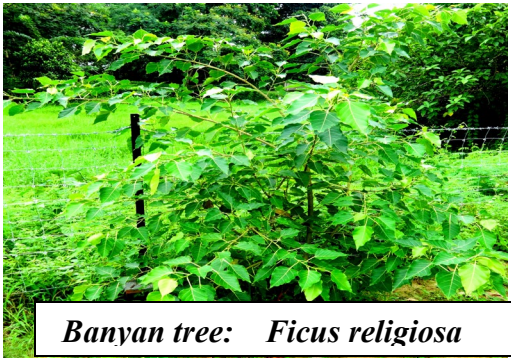
- >400 host plants of *K. lacca* have been identified so far. Palas, kusum, *Flemingia* sp., ber are the most preferred host plants in India.
- In Assam condition: *Flemingia* spp., ber, arahar, banyan tree, *Leea* spp. are also preferred host plants



Arahar: *Caianus caian*



Flemingia semialata



Banyan tree: *Ficus religiosa*



Makhioti: *Flemingia strobelifera*



Leea sp.



Flemingia Macrophylla



Schleichera oleosa



Kusum tree: *Butea monosperma*

LIFE CYCLE OF LAC INSECT, Kerria chinensis (Mahdihassan)

By

Purnima Das and Priyanka Saikia
Assistant Professor, Research Scholar

The life cycle of *Kerria chinensis* (Mahdi.) consist of egg, crawlers/nymphs, pupa, adult male and female.

Adult female:

- Pyriform body, size is about 4-5 mm, reproduction is ovoviviparous. It has three instars *i.e.* first, second (crawler stage) and adults.
- Female laid 300-600 eggs within its cell.

The body is divided into head, thorax and abdomen. Head bears a pair of degenerated antennae.

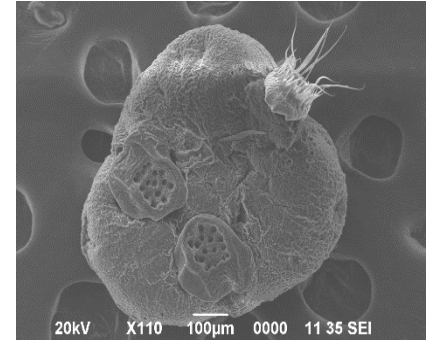
Eyes are absent. Mouthparts are of piercing and sucking

Crawlers:

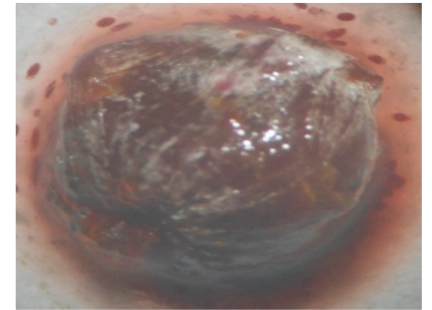
- Crawlers shape is ovate, crimson in colour & 0.59 mm in length.
- After first moult, both male and female nymphs lose their appendages, eye and become degenerate.
- Inside their cells, the nymphs cast off their second and third moult and mature into adults.

Adult male:

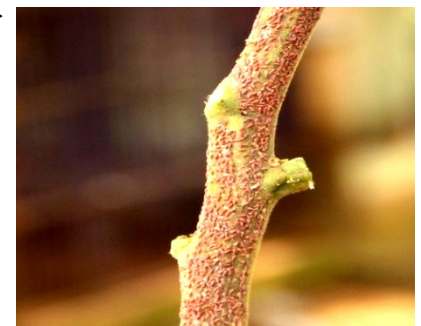
- The male of *K. chinensis* undergoes complete metamorphosis. They have usually five instars *i.e.* first, second (crawler stage), pre-pupal, pupa and adult. An adult male is 1.2-1.5 mm in length
- Head bears reduced eyes and ten segmented antennae.
- Mouth parts are piercing and sucking type; however, it is true for female also.
- Thorax has three pairs of legs.
- The eight-segmented abdomen ends into a short chitinous prominent sheath
- A pair of white elongated filament is present on either side of this sheath.



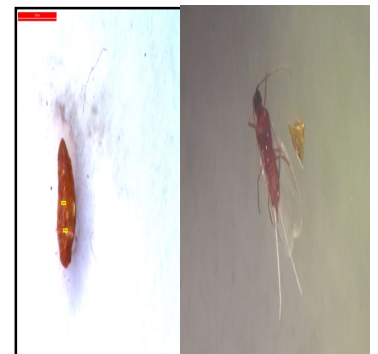
Adult female (SEM view)



Gravid female cell with



Crawlers



Pupa & Adult male