



Invasive Ambrosia Beetle Conference
The Situation in California
August 12 - 14, 2012

Meeting sponsored by:

The Hofshi Foundation

University of California, Riverside

UC Center for Invasive Pest Research

The Huntington Botanical Gardens

The Los Angeles Arboretum



Invasive Ambrosia Beetle Conference
The Situation in California
August 12 - 14, 2012

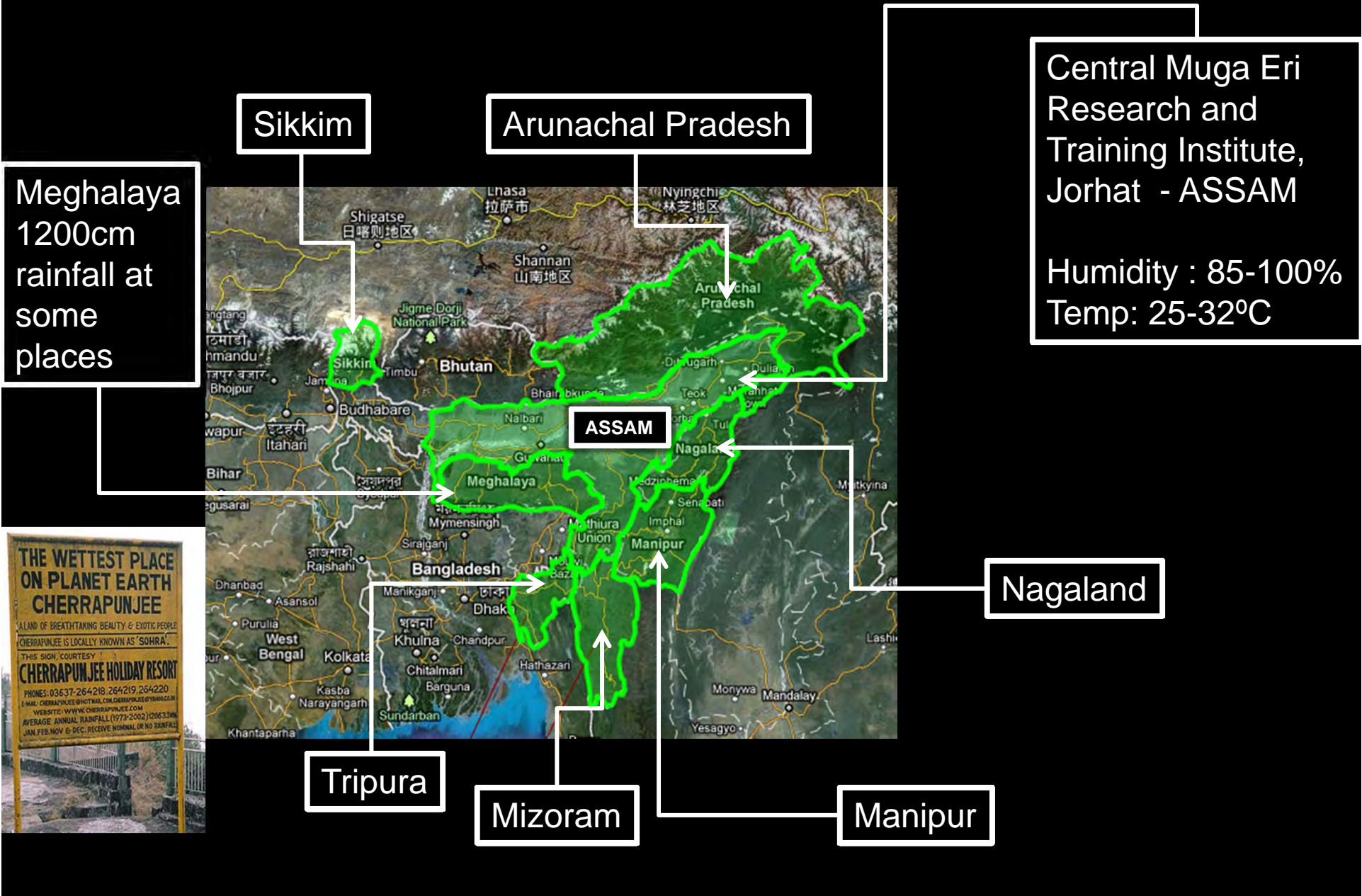
Session 6
Invasion Epidemiology

INSECT FAUNA ASSOCIATED WITH MUGA-ECOSYSTEM IN NORTH EAST INDIA AND AMBROSIA BEETLE



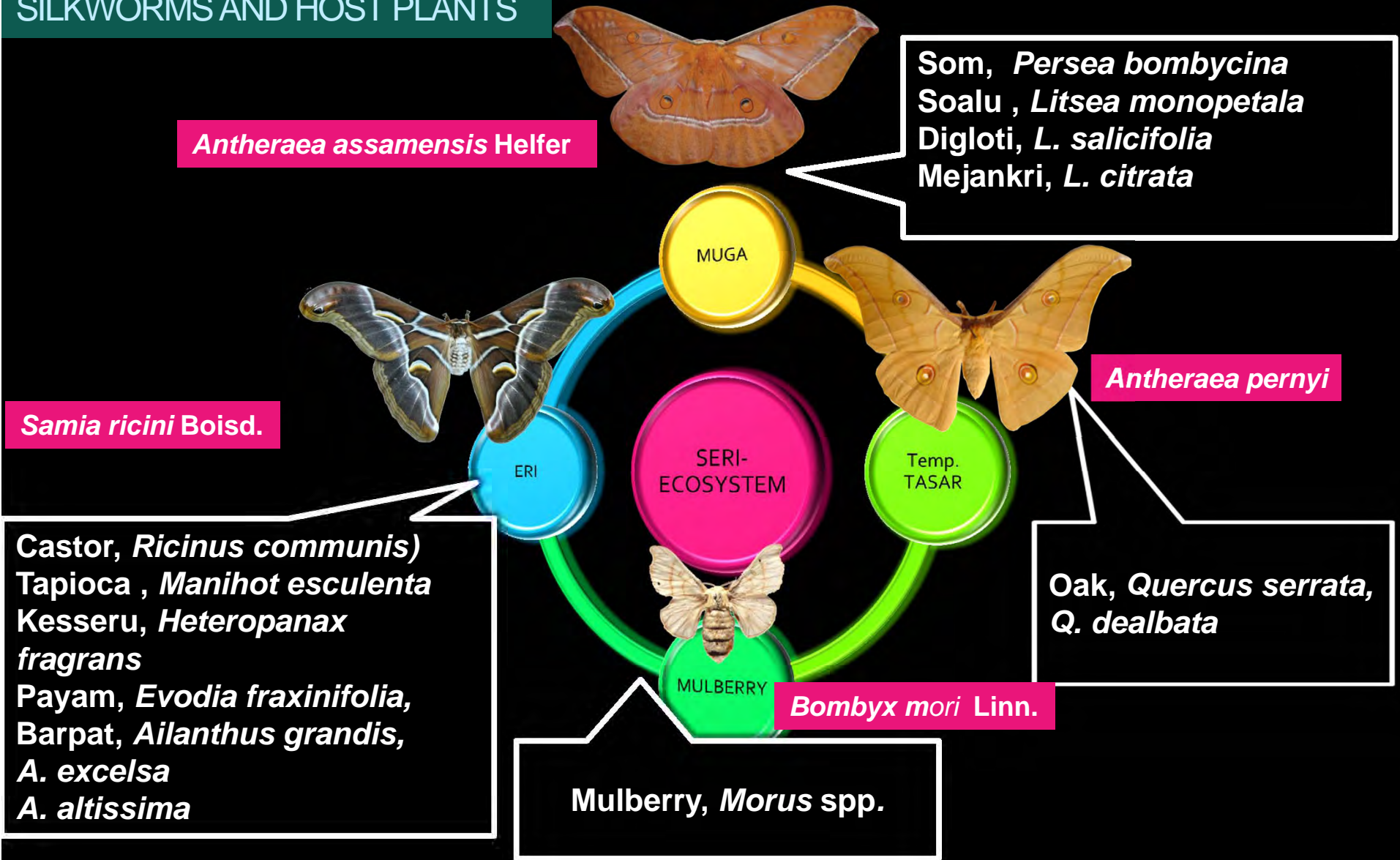
DR. RAJESH KUMAR
CENTRAL MUGA, ERI RESEARCH & TRAINING INSTITUTE
CENTRAL SILK BOARD
MINISTRY OF TEXTILES, GOVT. OF INDIA
Lahdoigarh – 785 700
Jorhat (ASSAM)

EXPLORATION

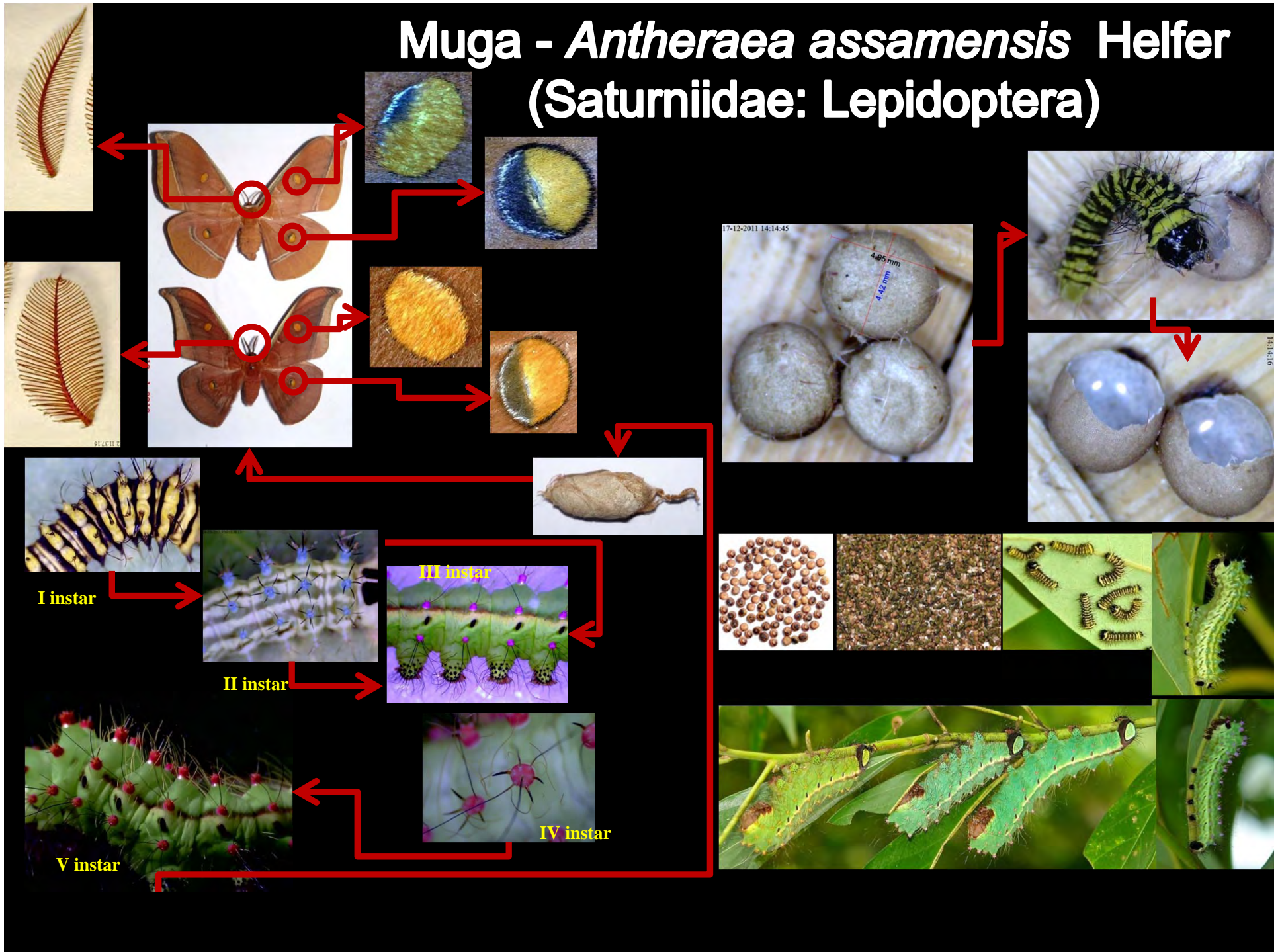


FOUR TYPES OF SILLKWORMS IN NORTH EAST INDIA

SILKWORMS AND HOST PLANTS



Muga - *Antheraea assamensis* Helfer (Saturniidae: Lepidoptera)



Rearing in the natural condition





Collection of silkworms



Collection of cocoons

Traditionally called "Jali"
(dried branches of *Persea bombycina* Kost)



Harvested Cocoons

Muga Silkworm Cocoons



Muga Silkworm Female moths tied on small branch of som plants for laying eggs



Muga Silk – *A. assamensis*



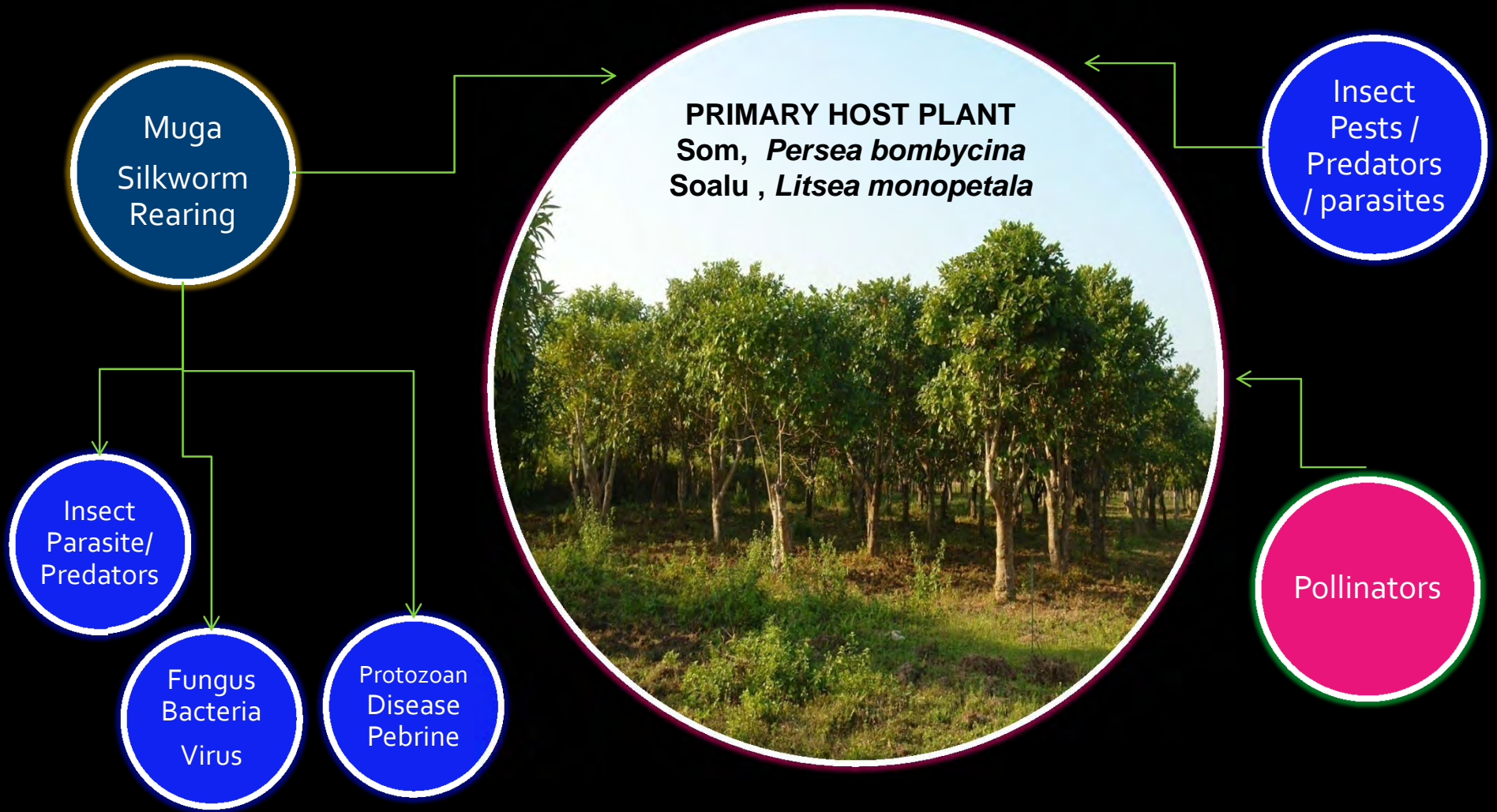
Eri Silk – *Samia ricini*



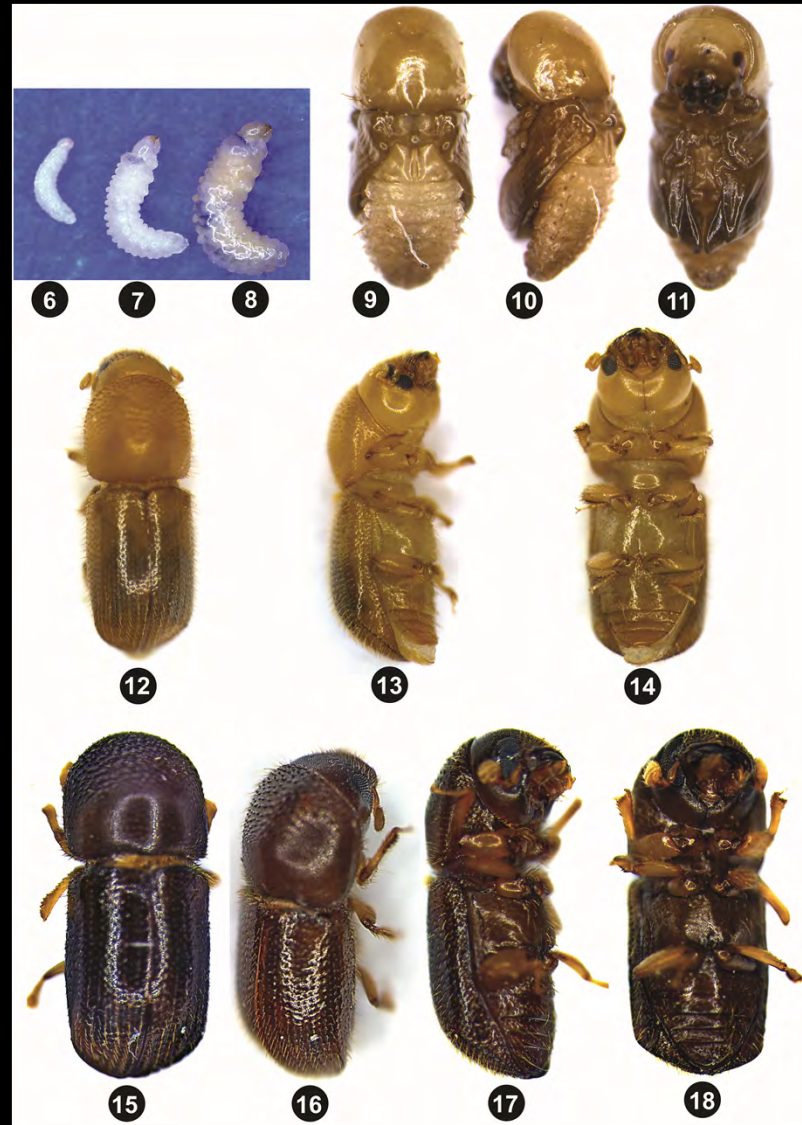
PRELIMINARY STUDY

Conducted at Farms of the Institute at Lahdoigarh, Jorhat and at farmers field of Sivasagar and Golaghat District of Assam on two host plants of Muga Silkworm (*Antheraea assamensis* Helfer) Som (*Persea bombycina* Kost) and Soalu (*Litsea monopetala*).

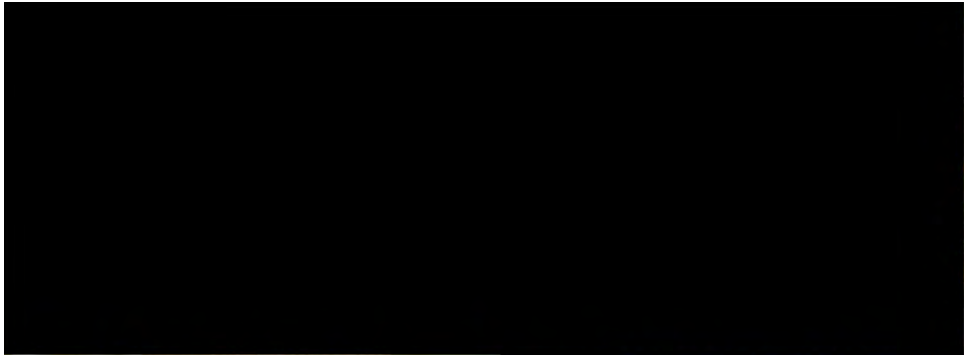
Muga-ecosystem



Tea shot hole borer, *Euwallacea fornicatus* (Eichhoff)



Rajesh Kumar et al., 2011. A new host plant for shot –hole borer, *Euwallacea fornicatus* (Eichhoff) (Coleoptera: Scolytidae) from India. *Acata Entomologica Sinica* 54(6): 734-738









■ Castor Bean



2012 04 25



A TOCKLAI CENTENARY INITIATIVE - WORLD TEA SCIENCE CONGRESS



WELCOME
ALL
DELEGATES
Mahkteshim-Agan India

23 11 2011



Leaf gall



Stem gall



Leaf gall

Pauropsylla sp.



New species - To be finalized after completing life cycle
One species reported from Japan and another one from India on Som plantation
Under monotypic Genus : (Curculionidae : Coleoptera)

Stem gall



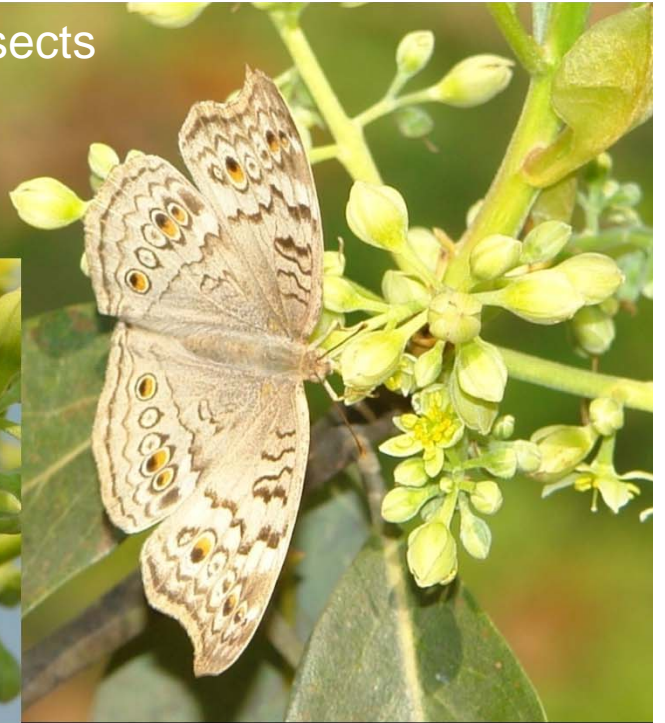
Agonoscelis sp.



Predators



Pollinators and visiting insects

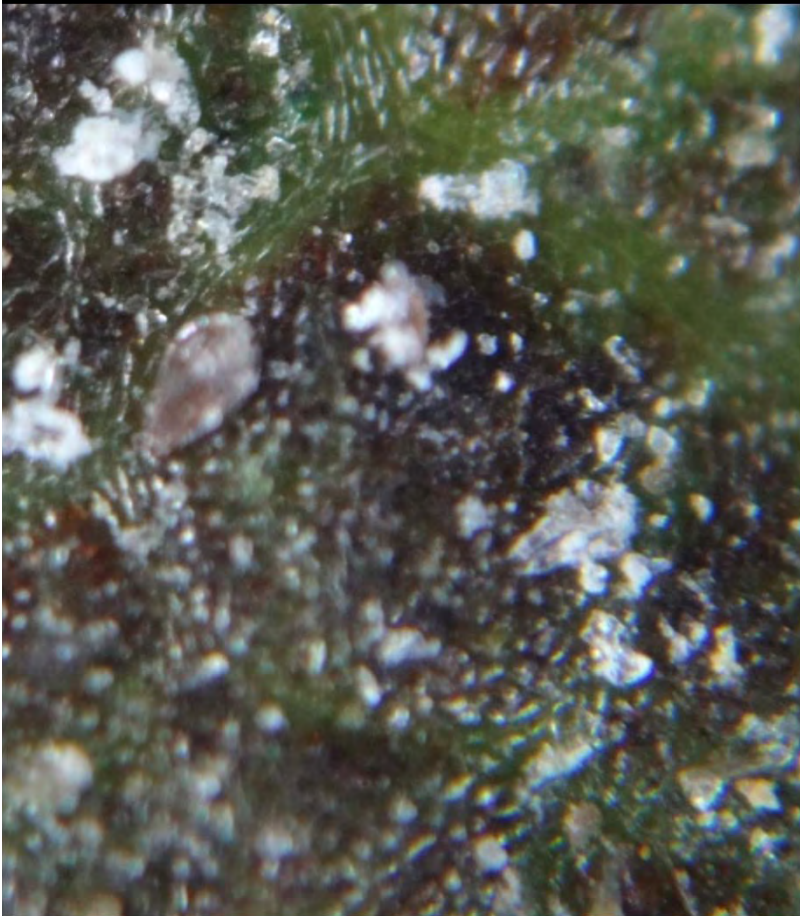


Another Host plant in the wild condition
***Litsea salicifolia* (Family Lauraceae)**
Common Name - Dighloti



2012 07 04

RED SPIDER MITE



SCALE INSECT



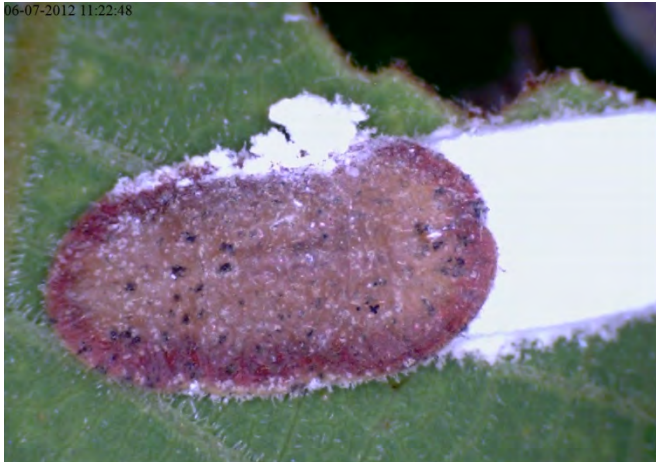


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06-07-2012 11:22:48



06-07-2012 11:22:47



06-07-2012 11:32:02



06-07-2012 11:21:30



06-07-2012 11:23:37



Bug sucking the sap on
top shoot of both the
plants

Persea bombycina and
Litsea monopetala

11-07-2012 14:45:05



11-07-2012 14:55:49



11-07-2012 14:56:05



Nymphs of bugs feeding on fruit



Spiraling Whitefly



Whitefly

2012 04 03

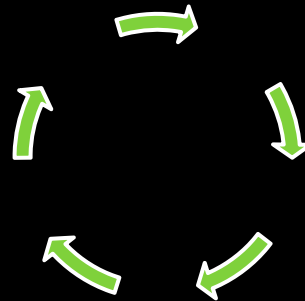


Whitefly

2012 04 03



Whitefly *Dialeuropora* sp. (?) Quaintance & Baker
Damaging on new flush of leaves from February to April -
Life Cycle Completed First Report



Pupal parasite of whitefly *Dialeuropora* sp. (?) Quaintance & Baker
To be identified - may be new or existing species



NEW RECORD ON SOM AND SOALU

Tingidae: Hemiptera

Staphanitis typicus

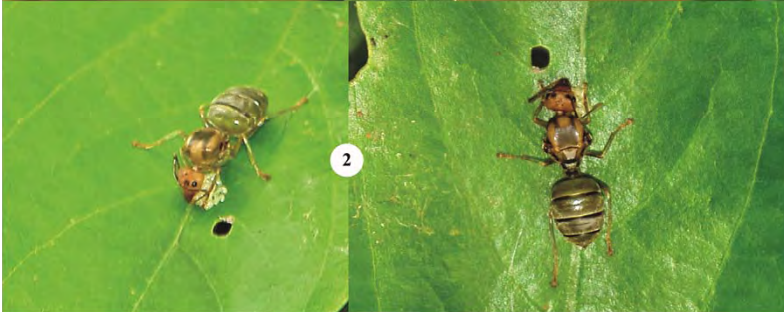


Coccoidea :Hemiptera

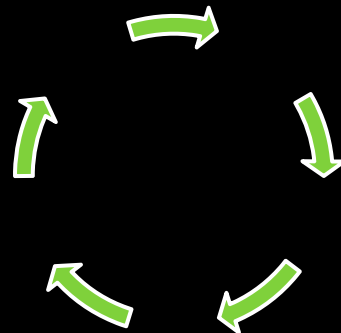


Impact of *Oecophylla smaragdina* in Muga Ecosystem

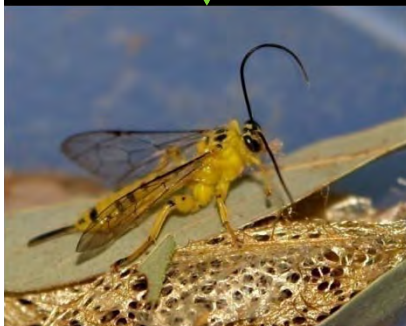
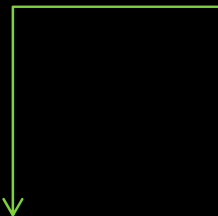
Rajesh Kumar et al, 2012. Submitted to Myrmecological News



***Cricula trifenestrata* (Helfer) (Saturniidae : Lepidoptera) - Pest of som plant**



Pupal
PARASITE



Zygaenids (Zygaenidae : Lepidoptera) collected from Soalu plants *Litsea monopetala*

Life cycle to be completed for these moths

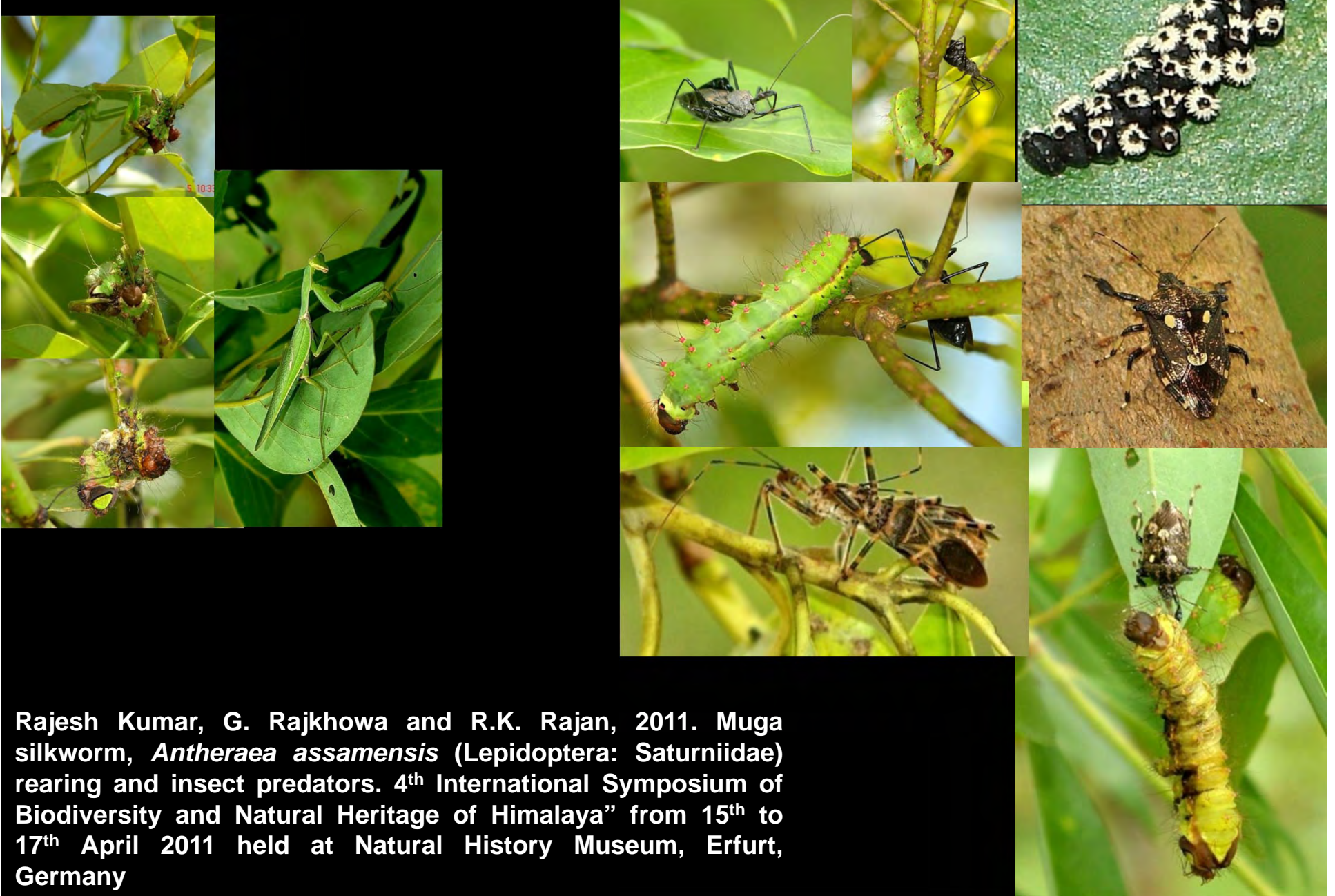


Gracelarid (Gracelaridae: Lepidoptera) on Som and Soalu both

Misidentified and published as
Phytomyza leaf miner (Chakravorty et al.,
2007)



Muga silkworm, *Antheraea assamensis* (Lepidoptera: Saturniidae) rearing and insect predators.



Rajesh Kumar, G. Rajkhowa and R.K. Rajan, 2011. Muga silkworm, *Antheraea assamensis* (Lepidoptera: Saturniidae) rearing and insect predators. 4th International Symposium of Biodiversity and Natural Heritage of Himalaya” from 15th to 17th April 2011 held at Natural History Museum, Erfurt, Germany

Xylotrupes gideon (Linnaeus)



Rajesh Kumar, et al., 2011. A new record of *Xylotrupes gideon* (Linnaeus) (Coleoptera: Scarabaeidae) on *Persea bombycina*, Kost. from India. *Munis Entomology & Zoology*, 6 (1): 173-175]

Gynandromorphy in *Antheraea assamensis*



Rajesh Kumar et al., 2010. Gynandromorphy in *Antheraea assamensis* Helfer (Saturniidae: Lepidoptera) from Lahdoigarh, Assam (INDIA). Vol. 5 (Suppl.): 1191-1193

First record of leaf rolling weevil, *Lamprolabus pseudobispinosus* (Coleoptera: Attelabidae) from India



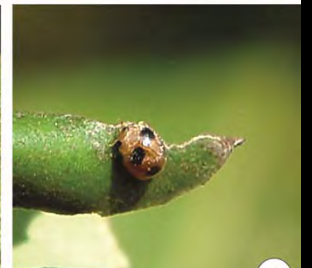
Earlier it was reported as new species from Yunnan by Legalov & Liu in 2005

Identified by Dr. Andrei Legalov, Attelabid Taxonomist, Russia

OCCURRENCE OF COCCINELIDS (COLEOPTERA) IN MUGA ECOSYSTEM During 2011-12

(Unpublished)

7. *Phrynocaria decemguttata* (Weise, 1912) Male
8. *Phrynocaria decemguttata* (Weise, 1912) Female
9. *Coelophora bowringii* Crotch
10. *Coelophora saucia* (Mulsant)
11. *Harmonia dimidiata* (F.)
12. *Phrynocaria unicolor* (F.)
13. *Epilachna vigintioctopunctata* (Fabricius)
14. *Coelophora saucia* (Mulsant)
15. *Micraspis discolor* (F.)
16. *Jauravia quadrinotata* Kapur



PRESERVED SPECIMENS



PRUNING





**THANK
YOU
SO
MUCH**