



First report of *Lema* sp nr *pectoralis* Baly, 1865 (Coleoptera: Chrysomelidae) on the green bay orchid *Eulophia andamanensis* Rchb.f (Orchidaceae: Epidendroideae)

T. Bharathimeena*

ICAR - Central Island Agricultural Research Institute, Port Blair 744 101,
Andaman and Nicobar Islands, India.
Email: bharathymina@gmail.com

ABSTRACT: Incidence of *Lema* sp nr *pectoralis* Baly (Coleoptera: Chrysomelidae) on *Eulophia andamanensis* Rchb.f (Orchidaceae: Epidendroideae) is reported for the first time.

© 2016 Association for Advancement of Entomology

Key words: First report of *Lema* sp, green bay orchid, India

Orchids are prone to attack by a number of pests including thrips, scales, aphids, beetles, caterpillars, wasps, ants, mites, molluscs and nematodes. The green bay orchid, *Eulophia andamanensis* Rchb.f, indigenous to the islands of Andaman and Nicobar in India and the Langkawi Island in Malaysia, is known for the longest spike. *Lema pectoralis* described by Baly (1865) from Singapore is a serious pest of orchids (Mohammedsaid, 2004). The typical subspecies, *Lema pectoralis pectoralis* Baly occurs in Peninsular Malaysia and Singapore (Mohammedsaid, 2004) while *L. pectoralis unicolor* Clark occurs in Nepal, Thailand, Vietnam, Hainan, south China, and Taiwan (Kimoto and Gressitt, 1979).

Massive infestation of *Lema* sp nr *pectoralis* was observed on *E. andamanensis* in green house as well as under open conditions at Garacharma, south Andamans from December 2015 till April 2016. Grubs and adults feed on the raceme and adults did not spare any arial part Persistent feeding by adults and grubs resulted in drying up of racemes, yellowing and browning of leaves. Buds turned

brown and necrotic. Flowers and buds were eaten up wholly or irregularly bitten and only green immature ones were spared. The plant as a whole presented a sickly appearance with clusters of pupae stuck in linear rows around the raceme.

The specimens collected were identified as *Lema* sp nr *pectoralis*. During January, 2016, an average of 0.5-1.0 grub, 2-3 live pupae, 2 pupal cases and 2.7 adults per plant were recorded. In February 2016, adult population was visibly high and as many as 12 beetles could be collected from a single plant. About 0.73, 3.60, 4.26, 2.0 grubs, pupae, pupal cases and adults respectively were noticed during the month.

Adult is a medium sized yellow beetle of about 0.9 - 1 cm length. They fed by scraping out the chlorophyll from raceme and leaf lamina and also bit through buds and flowers. Gregarious habit was common. The symptoms were noticed as linear, oblong or irregular circular transparent patches with excretory pellets strewn over. Being weak fliers, they could be easily handpicked. Several mating

* Author for correspondence

pairs were noticed during the afternoon. Amber coloured, cylindrical, slightly oblong eggs were singly laid, mostly on buds and partially eaten flowers. They resembled resin drops and were tightly glued to the substratum. The newly hatched larva carried the empty egg shell on its back for one day and was hardly distinguishable from the egg. The grubs were honey yellow, wrinkled with black prognathous head. They were also slightly humped. A pair of linear black spots appeared just beneath the head on the dorsum of thorax. They were covered by slimy greenish excreta. The larvae resembled bird excreta. Grubs were preferential over stalks of racemes and never fed on leaves or flowers. Pupa was bright yellow, enclosed within a whitish frothy, powdery, glutinous covering that stuck to the hands when touched. The pupal covering contained the head capsule of the last moult and also retained the sticky powdery coating for a few days. The adult emerged by biting a clear circular hole through it. As many as 10 pupae per raceme were found, leaving only a dried twig in the distal end.

Lema sp nr *pectoralis* differ from *L. pectoralis* Baly in having yellow antennae and tibiae (antennae and tibiae are black in both the subspecies of *P. pectoralis*). This species infests orchids throughout southern India and the *Lema* sp. reported on orchids by Kumari and Lyla (2001) is probably the same. In Kerala, adults of *Lema* sp. colonized on orchids soon after the rains. They were pale flavous and measured 9 mm. The yellowish, swollen grubs were not easily recognized in the field as they carried faecal matter on their back (Kumari and Lyla, 2001). *Lema pectoralis* is an oligophagous feeder on orchids. Grubs and adults cause heavy damage to flowers of *Spathoglottis* spp., *Epidendrum* spp., vanda and dendrobium (Jolivet, 1971; Hirao *et.al.* 2001). The larva of *L. pectoralis* passes through four stages and towards pupation excretes a meringue-like substance. Adults tend to remain in cocoon for few hours before they bite a circular exit hole and emerge out. They become sexually

mature in 14-21 days and multiple mating is common. All the stages of the pest are yellow coloured and the total development period lasts for 24 days (Hirao *et al.*, 2001).

Voucher specimens are deposited in the Central Island Agricultural Research Institute, Port Blair. This is the first report of *Lema* sp nr *pectoralis* on *E. andamanensis*.

ACKNOWLEDGEMENT

The specimens of *Lema* sp nr *pectoralis* were identified by Dr K. D. Prathapan, Kerala Agricultural University.

REFERENCES

- Baly J. S. (1865) Phytophaga Malayana. A revision of the phytophagous beetles of the Malay Archipelago, with description of the new species collected by Mr. A. R. Wallace. The Transactions of the Entomological Society of London 4: 1-76. [note: pages 77-300 printed in 1867]
- Hirao G. A., Gabriel B. P., Facundo H. T. (2001) Life history and habits of the orchid lema, *Lema pectoralis* Baly (Coleoptera: Chrysomelidae), a major pest of orchids. Philippine Agricultural Scientist 84 (2): 166-170.
- Jolivet P. (1971) A propos de la plante-hote de la Chrysomele des Orchidees *Lema (Pentauristes) pectoralis* Baly, 1865, en Thaïlande, Malaisie et Borneo (Col. Chrysomelidae Criocerinae). Bulletin de la Societe Entomologique de France 76 (9/10): 248-252.
- Kimoto S. and Gressitt J. L. (1979) Chrysomelidae (Coleoptera) of Thailand, Cambodia, Laos and vietna I. Sagrinae, Donaciinae, Zeugophorinae, Megalopodinae and Criocerinae. Pacific Insects 20 (2-3): 191-256.
- Kumari S. and Lyla K.R. (2001) A survey of the pests of orchids. Journal of Tropical Agriculture 39: 32-34.
- Mohamedsaid M.S. (2004) Catalogue of the Malaysian Chrysomelidae (Insecta: Coleoptera). Pensoft Publishers, Sofia, 239 pp.