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DESCRIPTION OF THE THIRD STAGE LARVAE OF *CUETA LINEOSA* (RAMBUR, 1842) (NEUROPTERA: MYRMELEONTIDAE) REARING FOR THE FIRST TIME IN IRAN

Introduction. H. Hölzel (1969) has described the male genitalia of *Cueta lineosa* on material from Egypt, Sudan and Turkey. He was also the first to report this species from Iran (Hölzel, 1968). No further data are available in literature detailing, in particular, on the third stage larva of this species.

The present paper describes the morphology, development and biology of the third instar larva of *C. lineosa*, in an attempt toward a complete picture of biology of immature stages of Myrmeleontidae, which has implications for understanding the phylogeny of the family, as the latter can be traced in the diverse life styles maintained by the larvae. These include arboreal, exposed on vegetation, in tree holes, exposed on rock, in fine dust and detritus in recesses and small caves, in detritus in burrows of animals, free living in sand and on pit boulders. For example, larvae of *Neulatus Navas* live in *Puya* (Bromeliaceae) plants in Chile, while *Jaffuelia Navas* live camouflaged on boulders (Mansell, 1999).

Materials and methods. The third stage larvae were collected in Khatounabad 10 km to Djiruft (Sabzevaran) (46°50' N, 35°23' E) on August 6, 2001 into cone-shaped traps installed in sand. Traps were 20–30 mm in diameter, 20–25 mm deep. The ambient temperature on the day of collecting was 47°C at daytime and 29°C at night; the surrounding vegetation was composed mainly of Common Purslane (*Portulaca oleracea*), Caper Bush (*Capparis spinosa*), Mesquite (*Prosopis stephanianus*), Wild Safflower (*Carthamus* sp.), *Tamarix* sp., *Daphne* sp. and *Salsola* sp. The larvae were subsequently fed on ants. Rearing was done at 25±1°C, photoperiod 16 L 8 D and 60 % RH. The time of pupation, pupal stage duration and emergence from cocoon have been recorded, and figures of wings and genitalia of imago have been made.

Cueta lineosa (Rambur, 1842)

Third stage larva (fig. 1): Body length 11.5 mm, breadth at widest part of abdomen 5.3 mm, body colour light brown.

Head light brown, midline of head on anterior part with two dark brown spots, with another two spots on posterior part.

Eyes on tubercle-like structure on sides of head, each composed of six black stemmata.

Antenna light brown, flagella with 11 segments.

Mandibles with three teeth, with 9 black bristles between head and first tooth, 3 bristles between first and second teeth, 2 bristles between second and third teeth, no bristles between third tooth and mandibular end. Mandible light brown, teeth dark brown.

Pronotum: middle part with two brown symmetrical spots, on sides with tufts of bristles.

Mesonotum and metanotum with three brown spots on each side, outermost edges bearing tufts of bristles.

Fore and mid tarsi each composed of two segments, hind tarsus one-segmented, distal tarsal segment with two claws.

Dorsal abdominal segments with an entire brown longitudinal stripe that reaches metathorax.

Cocoon made of sand particles, spherical, hollow, 10–12 mm in diameter. Emergence of imago through a circular cup-like opening cut at end of cocoon. Third larval stage exuvia remain at bottom of cocoon; white pupal exuvia are shed outside of cocoon after emergence of imago. Duration of pupal stage 12 days.

Imago. Body length 25.7 mm, fore wing 14 mm, hind wing 12 mm. Body colour light greyish brown. Abdomen yellowish, with longitudinal greyish brown stripes on dorsal, lateral and ventral parts.

Head with X-shaped brown markings between antennae.

Genae and clypeus yellow.

Wings (fig. 3) greyish brown, veins dark brown. Pterostigma distinct. Inner radial field of fore and hind wings with 7 transverse veins.

Legs: all tibial spurs longer than 1st tarsal segment.

Abdomen longer than fore wing.

Male genitalia (fig. 2): ectoproct short, apices of paramere and mediuncus sharp-pointed.

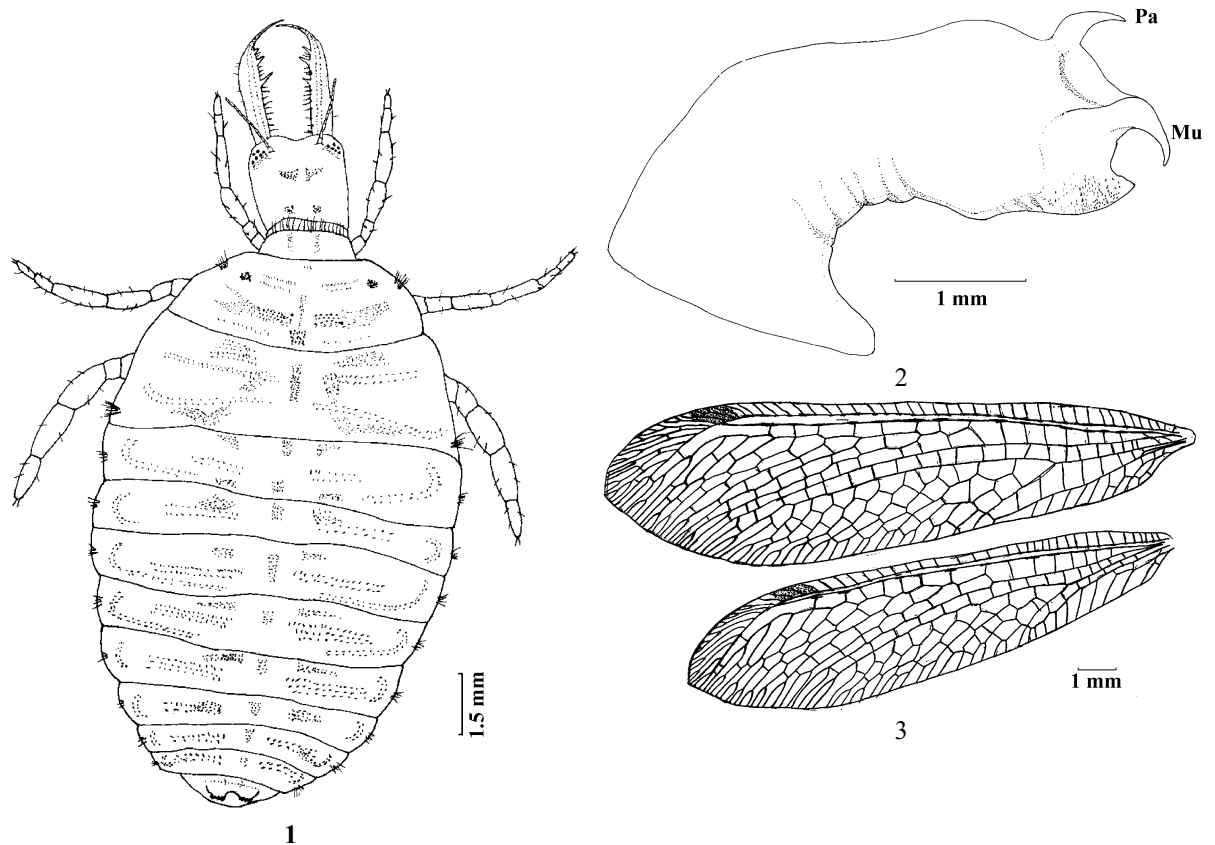


Fig. 1–3. *Cueta lineosa*: 1 – third stage larva; 2 – internal genitalia, ♂ (Mu – mediuncus, Pa – paramere); 3 – wing venation.

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College of Agriculture, Razi University, Kermanshah, Iran

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АЛИНАГИ МИРМОАЕДИ

ОПИСАНИЕ ЛИЧИНОК *CUETA LINEOSA* (RAMBUR, 1842) (NEUROPTERA: MYRMELEONTIDAE) III ВОЗРАСТА, ВПЕРВЫЕ ВЫВЕДЕННЫХ В ИРАНЕ

Сельскохозяйственный колледж, Университет Рази, Керманишах, Иран

РЕЗЮМЕ

Впервые описана личинка III возраста муравьиного льва *Cueta lineosa* (Rambur, 1842) из Ирана. Приводятся также описания куколки и имаго, сведения по биологии.

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