

A new glimpse on trophic interactions of 100-million-year old lacewing larvae

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Larvae of lacewings (Neuroptera) are known to be fierce predators. According to the morphology of fossil forms this seems to have been the case already in the Early Cretaceous. While being predators, lacewing larvae are also food items for other organisms. Here we report two pieces of amber from Myanmar providing instances of such cases. In one amber piece several isolated stylets of lacewing larvae are preserved closely associated together. The most likely interpretation is that a predator preying on lacewing larvae has regurgitated or defecated these non-digestible pieces, yet the identity of the predator remains unclear. The other amber piece preserves a larva resembling modern day larvae of split-footed lacewings (Nymphidae). The larva has projections on its trunk, allowing it to wear a camouflaging cloak. In the head region, a mite (Acari) is attached to the larva; more precisely, the entire anterior body region of the mite is apparently inserted into the lacewing larva. The mite is smaller than the larva. It is known from the modern fauna that stage 1 larvae of Ascalaphidae can be attacked also by rather small predators, such as ants. The mite can therefore well be interpreted as a true predator instead of a parasite, especially considering the unusual mode of attachment. We briefly review interactions of lacewing larvae with other organisms represented in amber from Myanmar and add two new pieces to the puzzle of reconstructing the trophic interactions in the 100-million-year old amber forest.

Key words: Neuroptera, Nymphidae, food-web reconstruction, Burmese amber, larvae, syninclusions, Cretaceous, Myanmar.

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