Eggs, first instar larvae and distribution of the neuropterids *Lertha extensa* and *L. sheppardi* (Neuroptera: Nemopteridae) in south-eastern Turkey

by Ali Satar and Cengizhan Özbay

Abstract. The morphology of the eggs and first instar larvae of *Lertha extensa* (Oliver, 1811) and *Lertha sheppardi* (Kirby, 1904) are described and illustrated with drawings and photographs. Both species can be identified based on first instar larvae. The distribution of both species in south-eastern Turkey is given.

Kurzfassung. Von den beiden Neuropteren *Lertha extensa* (Oliver, 1811) und *Lertha sheppardi* (Kirby, 1904) werden die Eier und die Larven des ersten Instar-Stadiums beschrieben und mit Fotos und Zeichnungen abgebildet. Beide Arten können anhand von Merkmalen der ersten Instar-Larven identifiziert werden. Die Verbreitung in Südost-Anatolien wird beschrieben.

Key words. Nemopteridae, *Lertha*, egg, first instar larva, distribution, Turkey, Middle East.

Introduction

Only a relatively few biological characteristics are shared by all members of the Neuroptera. Whereas the individual development of some species can be completed in a few weeks, it takes more than two years in others. The common biological characteristics of the Neuroptera can be found in the larval development, where three larval instars are passed before the third instar begins to spin a silken cocoon. The third instar remains in this cocoon as a so-called prepupa. In many species the prepupa is the instar for diapausing, but this may also take place in all other stages, including the egg and the pupa. Pupation takes place in the cocoon, from which the pupa emerges after biting a hole in the silken web. The imago emerges shortly after the pupa leaves the cocoon. Feeding, mating and egg-laying by the adults vary within the families (STELZL & DEVETAK 1999).

The Nemopteridae comprise worldwide about 150 species, with four of them occurring in Europe (POPOV 1970, HÖLZEL 1975, ASPÖCK et al. 2001). The family is divided into two subfamilies (ASPÖCK et al. 1980). One of these is the Crocinae, with some 50 species of small size. They are distributed in arid and deserts zones on the southern borders of the West Palaearctic and West Oriental Region, and in dry areas from the Neotropical, Afrotropical and Australian Regions. With crepuscular-nocturnal flying activity and troglobiontic habits, their imaginal and preimaginal biology and morphology are reasonably well-known, and their taxonomy, biogeography and phylogeny have been revised. The second subfamily is the Nemopterinae, with two European genera: *Nemoptera* Latreille, 1802 and *Lertha* Navas, 1910. The subfamily comprises almost 100 species and includes some of the largest and most

Zoology in the Middle East 32, 2004: 91–96.
ISSN 0939-7140 © Kasparek Verlag, Heidelberg