

Introduction

The Neuropterida is a small superorder of holometabolous insects that contains ca. 6,500 extant species and is distributed worldwide. In Slovenia, neuropterid insects are relatively well investigated. The Slovenian name for the Neuropterida – lacewings (in a broad sense) is mrežekrilci (v širšem smislu) (for Slovenian names of lacewing orders and families see Devetak 2003).

Geographical and Geopolitical Divisions of Slovenia

From a zoological point of view Slovenia is a very interesting part of Central Europe (sometimes placed in Southeastern Europe). Despite the fact that it is a small country, covering only 20,273 square kilometers, it is known for its diversity of species. The great biodiversity of the country is attributable to its varied climate, topography, and vegetation, all of which promote species richness. Four of the major geographic regions of Europe meet in Slovenia: the Mediterranean, the Alps, the Dinarides, and the Pannonian. The country is mostly mountainous, with a prevailing continental climate. The coastal region has a sub-Mediterranean climate, and in the high mountains an Alpine climate dominates.



Figure 1. Statistical regions of Slovenia.

In 2000 Slovenia was divided into 12 statistical regions (Figure 1), which replaced the traditional regions into which the country was formerly divided. The statistical regions are entities created primarily for legal and statistical purposes (Table 1). They are used in the Neuropterida of Slovenia fauna project because they represent the current de facto first-order geopolitical

subdivisions of Slovenia. In many zoological studies, a five-region zoogeographic division of Slovenia – Submediterranean, Dinaric, Alpine, Prealpine, and Subpannonian – is used (e.g., Carnelutti 1992). The zoogeographic divisions are distributed across the statistical regions approximately as follows: Submediterranean – Gorizia and Coastal Karst; Dinaric – Inner Carniola-Karst and parts of Southeast Slovenia; Alpine – most of Upper Carniola; Prealpine – Carinthia, Savinja, Central Sava, and Central Slovenia; and Subpannonian – Mura, Drava, Lower Sava, and parts of Southeast Slovenia.

Overview of the History of the Study of Slovenian Neuropterida

The oldest documented record of a Slovenian neuropterid insect – the antlion *Distoleon tetragrammicus* (Fabricius) – dates back to the pre-Linnaean period when J. V. Valvasor included it in a manuscript book that contained brilliant aquarelles of many Slovenian animals and plants (Valvasor 1685; Wraber et al. 1990; Valvasor et al. 2004). Eight decades later, in the Linnaean period, J. A. Scopoli (1763) published his famous *Entomologia Carniolica*, which contained descriptions of seven neuropterid species. In this unique monograph devoted to Slovenian insects, Scopoli described three new lacewing species from Slovenian territory – the osmylid *Osmylus fulvicephalus*, the green lacewing *Nineta flava*, and the owlfly *Libelloides macaronius*.

In the 19th Century, F. Schmidt was one of the most important naturalists collecting insects in Slovenia. Schmidt's entomological collection, now in the Natural History Museum of Slovenia (NHMS) in Ljubljana, contains the oldest preserved Neuropterida specimens that were collected

complete picture of the Slovenian Neuropterid fauna, listing 22 species. An additional paper on Slovenian lacewings was presented a few years later, co-authored with the Austrian collector G. Strobl (Strobl & Klapálek 1906). From this period also date the collections of J. Staudacher, J. Stussiner, and M. Hafner, also now in the NHMS. Mate Hafner was the first Slovenian entomologist to collect Neuropterida (in addition to other insect orders). Before the beginning of World War II, Czech entomologist Táborský (1939), in his review of the owlfly *Libelloides macaronius* (Scopoli), contributed additional records for the country.

Table 1. Statistical regions of Slovenia.

Slovenian Name	English Name	Abbreviation
Gorenjska	Upper Carniola	GORE
Goriška	Gorizia	GORI
Jugovzhodna Slovenija	Southeast Slovenia	JUGO
Koroška	Carinthia	KORO
Notranjsko-kraška	Inner Carniola-Karst	NOTR
Obalno-kraška	Coastal-Karst	OBAL
Osrednjeslovenska	Central Slovenia	OSRE
Podravska	Drava	PODR
Pomurska	Mura	POMU
Posavska	Lower Sava	POSA
Savinjska	Savinja	SAVI
Zasavska	Central Sava	ZASA

A renaissance in Slovenian neuropterological research began after World War II. Kimmins (1963) described a new brown lacewing species – *Wesmaelius tjederi* (Kimmins) – from the Julian Alps in Slovenia, and several additional papers were published between 1963 and 1980 that contain further data on the presence of certain species in the country (Steinmann 1963; Hölzel 1964, 1973;

Aspöck & Aspöck 1975; Aspöck et al. 1976; Hölzel et al. 1980). From the post-World War II period the Neuropterida collected by Š. Michieli (now incorporated into the author's collection) are also worth mention.

An important milestone was reached in the year 1980 when H. Aspöck, U. Aspöck, H. Hölzel, and H. Rausch published their monograph of the European Neuropterida (Aspöck et al. 1980), which stimulated and promoted further modern neuropterological studies. The German author Saure (1989), in his review of the Neuroptera in Greece and Yugoslavia, listed 5 species from Slovenia, and Monserrat (1991, 1993, 2005) presented a variety of new data on the occurrence of lacewings in the country.

Since 1977, several Slovenian authors have published a number of papers specifically devoted to the fauna of the country (Devetak et al. 1977, 2010, 2015; Devetak 1984a, b, c, 1995, 1996, 2002, 2003 [Živalstvo Slovenije], 2007, 2011; Lipovšek & Mencinger 2002; Devetak & Devetak 2004; P. Devetak 2007; Jones & Devetak 2009; Klokočovnik et al. 2010).

Methods

In addition to records from literature and natural history collection sources, the faunal list presented here contains occurrence records of specimens collected by the author and his associates and colleagues (see Acknowledgments) that have not previously been published. Adult lacewings were collected using an insect net or were collected by hand near a light source. Antlion larvae were excavated from their pits using a spoon. Insects were preserved either in ethanol or dry (pinned or pointed) and most of them are deposited in the author's collection in Maribor.