

# DIVERSITY OF COCKROACHES (Blattodea) IN PRESPA NATIONAL PARK (ALBANIA)

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## 1. Introduction

Cockroaches are included in the order Blattodea of infraclass Neoptera, class Insecta. Cockroaches (or their predecessors, some of Dictyoptera) are representatives dated back to the Upper Carboniferous, appear as one of the oldest and most diverse in the Paleozoic insect groups and occupy an important position in modern tropical ecosystems. The group is divided into three superfamilies - Blaberoidea, Blattoidea and Corydioidea. Contemporary representatives on the latest data are merged into 9 families with more than 4,600 valid taxa belong to species and subspecies group (Beccaloni 2007) distributed on all continents except Antarctica. Taxonomic diversity is greatest in the equatorial and tropical areas (except deserts), gradually decreasing to the north. Cockroaches are omnivorous or herbivorous insects, which in some cases showing early form of sociality and care for offspring (species of the families Cryptocercidae and Blaberidae). Cockroaches live in a variety of habitats - from the humid equatorial forests to Tundra and higher altitudes in the mountains. Its members occupy different ecological habitats and are important in the food chain. In some tropical areas, cockroaches are used for food by human.

About 155 accepted species names are currently recognized on the territory of Europe (Blattodea Species File Online. <http://blattodea.speciesfile.org>). The diversity of this group is highest in the southern parts of Europe and is strongly defined by the high endemism. The territory of the Balkans and Western Asia embraces some of the oldest mainlands and keeps an immense biodiversity.

### 1.1 Literature review (present knowledge)

The cockroaches fauna of Albania is poorly known, only 9 species are list (Heller & de Jong 2013). The region of Prespa Lake respectively is poorly studied and no data are published from the Albanian and Macedonian side of this region.

## 2. Methodology

### 2.1 Sampling methods

Collection material has been collected mostly by hand (or using an entomologic net) within the vegetation cover and under leaf litter, as well as under stones. In addition, soil traps have been used.

### 2.2 Determination of species and their distribution areas

The standard methodology includes direct observation and comparison. The specific methodology necessary for fine comparisons, description and diagnosing of taxa includes removing the complete abdomen and dissection. If necessary, slide preparations of KOH-treated cuticular structures mounted in Euparal were made. For better identification and determination of the studied materials have been used the keys of some basic literature sources (Bay Bienko 1950; Princis 1965; Harz, Kaltenbach 1976; Failla, Messina 1978).

## 3. Results

### 3.1 Species diversity

## BLATTODEA

### Blaberoidea

#### Ectobiidae Brunner von Wattenwyl, 1865

#### Ectobiinae Brunner von Wattenwyl, 1865

#### *Ectobius* Stephens, 1835

#### *Ectobius balcani* Ramme, 1923

#### Localities & Material

Galichitsa Mt.: (DL81) above Korito cheshma place, N40°49'16.31" E20°50'51.97", 1809 m, 25.06.2013, 1♂, manually collected, meadow (D. Chobanov;S. Hristovski) • (DL82) near the top of highest peak of Galichitsa Mt., N40°53'50.96" E20°50'07.99", 2228 m, 25.06.2013, 1♂, manually collected, meadow (D. Chobanov;S. Hristovski), 23.07.2013, 1♀, manually collected, meadow (G. Hristov;S. Hristovski;D. Melovski) • above Gorice e Madhe village, N40°53'43.46" E20°50'44.55", 1827 m, 23.07.2013, 1♂, 2♀♀, manually collected, meadow (G. Hristov;S. Hristovski;D. Melovski).

#### Genus *Phyllodromica* Fieber, 1853

*Phyllodromica brevipennis* (Fischer, 1853)

**Localities & Material**

Galichitsa Mt.: (DL82) above Gorice e Madhe village, N40°54'05.70" E20°51'47.81", 1341 m, 25.05.2013, 11♂♂, 1♀, 1 larvae, under leaf litter (G. Hristov;l. Dedov;S. Hristovski), N40°54'44.00" E20°50'59.03", 1709 m, 25.05.2013, 2♂♂, 2♀♀, 6 larvae, under stones (G. Hristov;l. Dedov;S. Hristovski), N40°53'54.09" E20°51'52.41", 1312 m, 24.05 - 25.06.2013, 1 larvae, soil traps (S. Hristovski;D. Chobanov), N40°53'53.10" E20°51'53.20", 1307 m, 24.06.2013, 2♀♀, 1 larvae, under leaf litter (S. Hristovski;D. Chobanov), N40°53'43.46" E20°50'44.55", 1827 m, 23.07.2013, 3♂♂, 1♀, under leaf litter (G. Hristov;S. Hristovski;D. Melovski), N40°54'03.03" E20°51'26.50", 1456 m, 23.07.2013, 1♀, under leaf litter (G. Hristov;S. Hristovski;D. Melovski), N40°54'22.20" E20°51'09.98", 1598 m, 24.09.2013, 2♀♀, under leaf litter (G. Hristov;S. Hristovski;D. Chobanov) • (DL92) near Gorice e Vogel village, N40°52'08.24" E20°55'50.63", 882 m, 25.05.2013, 2♂♂, 1♀, under leaf litter (G. Hristov;l. Dedov;S. Hristovski).

*Phyllodromica carniolica* (Ramme, 1913)

**Localities & Material**

Galichitsa Mt.: (DL82) above Gorice e Madhe village, N40°54'44.00" E20°50'59.03", 1709 m, 25.05.2013, 1♂, 2 larvae, under stones (G. Hristov;l. Dedov;S. Hristovski), N40°53'43.46" E20°50'44.55", 1827 m, 23.07.2013, 1♂ (G. Hristov;S. Hristovski;D. Melovski), N40°54'03.03" E20°51'26.50", 1456 m, 23.07.2013, 2♂♂, 1♀, under leaf litter (G. Hristov;S. Hristovski;D. Melovski), N40°53'48.25" E20°52'00.79", 1284 m, 23.07.2013, 1♂, 1♀, under leaf litter (G. Hristov;S. Hristovski;D. Melovski), N40°54'22.20" E20°51'09.98", 1598 m, 24.09.2013, 2♀♀, under leaf litter (G. Hristov;S. Hristovski;D. Chobanov).

*Phyllodromica graeca* (Brunner von Wattenwyl, 1882)

New species for the fauna of Albania

**Localities & Material**

Galichitsa Mt.: (DL82) above Gorice e Madhe village, N40°54'31.76" E20°50'58.39", 1649 m, 25.05.2013, 1♂, under stones (G. Hristov;l. Dedov;S. Hristovski) • under the top of highest peak of Galichitsa Mt., N40°52'54.53" E20°50'38.02", 2146 m, 23.07.2013, 1♂, manually collected, under stones (G. Hristov;S. Hristovski;D. Melovski).

*Phyllodromica pallida* (Brunner von Wattenwyl, 1882)

New species for the fauna of Albania

**Localities & Material**

Galichitsa Mt.: (DL92) 1,5 km N of Gorice e Madhe village, N40°54'37.30" E20°53'42.19", 967 m, 25.05.2013, 1♂, 4 larvae, under leaf litter (G. Hristov;l. Dedov;S. Hristovski), 24.05 - 25.06.2013, 1♂, 1♀, 1 larvae, unsoil traps (S. Hristovski;D. Chobanov) • (DL82) above Gorice e Madhe village, N40°54'27.04" E20°50'49.97", 1708 m, 25.05.2013, 1♂, 3 larvae, manually collected, under leaf litter (G. Hristov;l. Dedov;S. Hristovski), N40°53'53.10" E20°51'53.20", 1307 m, 24.06.2013, 1♂, 1 larvae, manually collected, under leaf litter (S. Hristovski; D. Chobanov), N40°54'03.03" E20°51'26.50", 1456 m, 23.07.2013, 8♂♂, 5♀♀, manually collected, under leaf litter (G. Hristov;S. Hristovski;D. Melovski), N40°54'22.20" E20°51'09.98", 1598 m, 24.09.2013, 2♀♀, manually collected, under leaf litter (G. Hristov;S. Hristovski;D. Chobanov) • (DL92) Gorice e Madhe village, near the church, N40°53'35.28" E20°54'07.89", 918 m, 24.05.2013, 6♂♂, 2♀♀, 18 larvae, under stones (G. Hristov;l. Dedov;S. Hristovski) • near Gorice e Vogel village, N40°52'08.24" E20°55'50.63", 882 m, 25.05.2013, 2♂♂, under leaf litter (G. Hristov;l. Dedov;S. Hristovski) • (DL90) near Rakicke village, N40°43'28.30" E20°58'36.50",

1107 m, 26.05.2013, 1♂, under leaf litter (G. Hristov;I. Dedov;S. Hristovski) • near Shuec village, N40°41'05.92" E20°59'55.27", 868 m, 26.05.2013, 1 larvae, under leaf litter (G. Hristov;I. Dedov;S. Hristovski) ) • (DL91) near Zaroshke village, N40°46'01.00" E20°55'32.42", 846 m, 27.05.2013, 1 larvae, under stones (G. Hristov;I. Dedov;S. Hristovski) • near Zaroshke village, path to Cerje village, N40°45'27.31" E20°55'09.63", 912 m, 27.05.2013, 3 larvae, under leaf litter (G. Hristov;I. Dedov;S. Hristovski), 24.07.2013, 1♂, under leaf litter (G. Hristov;S. Hristovski;D. Melovski).

## 4. Biology

The species of Blattodea group which we record in Prespa National Park are mainly found in montane regions. They usually prefer higher altitudes but – especially a species *Phyllodromica carniolica* – can also be found at lower altitudes. They seem to prefer woodlands localities, but may also occur in low vegetation and under leaf litter.

## 5. References

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