NATURA MONTENEGRINA, Podgorica, 10(2): 87-92

LADYBIRDS (COCCINELLIDAE) FROM NEIGHBOURHOOD OF OHRID AND PRESPA LAKES (MACEDONIA)

Andrzej JADWISZCZAK[1], Lech PIETRZAK[2], Andrzej ZAWAL[3], Stojmir STOJANOVSKI[4], Stoe SMILJKOV[5], Goce KOSTOSKI[4]

1 ul. Słowicza 11, 11-041 Olsztyn; E-mail: andrzej.jadwiszczak@wydawnictwo-mantis.eu;
2 Mazurian University in Olecko, Department of Environmental Protection, Plac Zamkowy 5, 19–400 Olecko, Poland; E–mail: lpietrzak@wp.pl;
3 Depertment of Invertebrate Zoology & Limnology, University of Szczecin, Poland; E-mail: zawal@univ.szczecin.pl;
4 Hydrobiological Institute, Ohrid, Macedonia; E-mail: stojstoi@gmail.com;
5 Faculty of Natural Sciences, Skopje, Macedonia; E-mail: stoe@iunona.pmf.ukim.edu.mk;

Key words:
Coleoptera,
Balkans,
Lake Ohrid,
Lake Prespa.

SYNOPSIS

The paper deals with preliminary investigate of ladybirds (Coccinellidae) of lakes Ohrid and Prespa neighbourhoods (Macedonia). On that score Macedonia is one of the worst examined field in Europe. In total 15 species and two new species for the fauna of Macedonia were recorded among them.

INTRODUCTION

Lakes Ohrid and Prespa belongs to group of Dessaretes lakes situated in Macedonia, Albania and Greece. Oligotrophic lake Ohrid is the biggest and eldest of them and it is one of the eldest in Europe (5–8 mln years), and its fauna characterized by high biodiversity and high endemic degree (STANKOVIĆ, 1960; ALBRECHT & WILKE, 2008). Because of high natural values it was inscribed as UNESCO Nature Reserve in 1979 year.

The knowledge about insects of the region is very poor, till now mainly aquatic insects (Chironomidae, Ephemeroptera, Odonata and Trichoptera) were investigated (STANKOVIĆ, 1960; SMILJKOV & SHAPKAREV, 1998; SMILJKOV, 2001; ALBRECHT & WILKE, 2008, ZAWAL et al., 2010). Practically there are no records about terrestrial insects from this area, and ladybirds are very poor know from the whole area of Macedonia. Separate elaboration about Coccinellidae from Macedonia does not exist, and some records we can find in other of papers (BIELAWSKI & GIESE, 1964; JORDANOVA, 2002).

Until now 31 ladybird species recorded from Macedonia (JORDANOVA, 2002).

The aim of the paper is enriched knowledge about Coccinellidae of the neighborhoods of Ohrid and Prespa lakes.

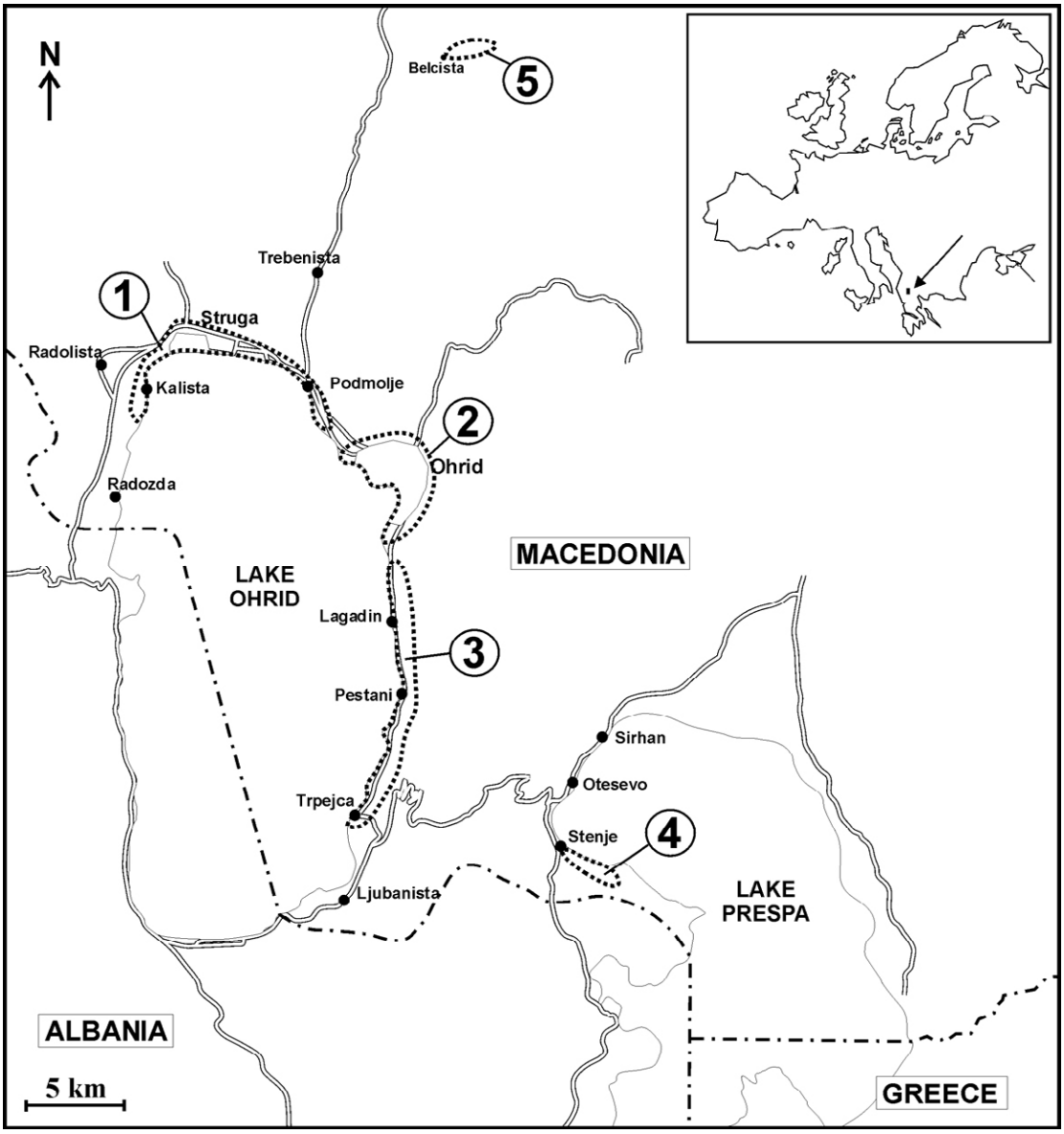

Figure 1: Lakes Ohrid and Prespa, numbers show positions of investigated areas: 1-Northern border of Ohrid Lake; 2-Ohrid; 3-Ohrid – St. Naum; 4-Stenje; 5-Belčišta.

MATERIAL AND METHODS

Ladybirds were collected during hydrobiological fieldworks in 18 June – 2 July 2009 year. The investigated area covered borders of lakes Ohrid and Prespa and

their neighborhood. The intensity of investigation was different in particular places.

1. Northern border of Ohrid Lake, from Podmolje village to monastery Kališta. The most eutrophic part of the lake with well developed phytolitoral, borders mostly slightly sloping comprise the valley of Black Drin river.

2. Ohrid – mainly grasses and peatbogs at north-eastern bank of the Ohrid Lake.

3. Ohrid – St. Naum. Mostly abrupt and rocky bank with xerothermic vegetation, between Ohrid town and St. Naum monastery.

4. Stenje – sandy bank of Prespa Lake, xerothermic vegetation on dry bottom of the lake.

5. Belčišta – xerothermic communities on hills and wet meadows near spring Sini Virovi.

RESULTS AND DISCUSSION

The collected material includes 15 species belonging to 4 families. Two species are new for the fauna of Macedonia. The most numerous were common, Palaearctic and South Palaearctic species.

FAMILY: Epilachninae

Subcoccinella vigintiquatuorpunctata (Linnaeus, 1758)

Material examined: locality no. 1, 22 June–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 4 pcs.; locality no. 2, 18 June–2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 2 pcs.

Remarks: Palaearctic species, dragged to North America, phytophagous.

FAMILY: Coccidulinae

Coccidula scutellata (Herbst, 1783)

Material examined: locality no. 2, 18 June–2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 5, 30 June 2010, 02 July 2010, coll. Pietrzak, Zawal, Stojanovski – 2 pcs.

Palaearctic, occur in the whole Europe exclude North Great Britain and Fennoscandia. Recorded in reeds and sedges. New for the fauna of Macedonia.

Rhyzobius litura (Fabricius, 1787)

Material examined: locality no.1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.

Species occurs in South and Central Europe and North Africa, also know from Canary Islands, Madeira and Azores. New for the fauna of Macedonia.

FAMILY: Scymninae

Scymnus* (*Scymnus*) *frontalis (Fabricius, 1787)

Material examined: locality no. 4, 25 June 2009, coll. Pietrzak – 1 pc.

Wide spread Palaearctic species. Because of close similarities to other species identification is possible only by male's genitalia. Because only one female was collected, correction of identification should be confirmed by male's material in the future.

Scymnus (Scymnus) rubromaculatus (Goeze, 1777)

Material examined: locality no.3, 18–21 June 2009, 26–28 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 5, 30 June 2010, 02 July 2010, coll. Pietrzak, Zawal, Stojanovski – 2 pcs.

South Palaearctic species occurs in the whole Europe excluding north part. Mainly recorded on bushes.

FAMILY: Coccinellinae

Adalia bipunctata (Linnaeus, 1758)

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 2, 18 June –2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 3, 18–21 June 2009, 26–28 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 4, 25 June 2009, coll. Pietrzak – 2 pcs. locality no. 5, 30 June 2010, 02 July 2010 r., coll. Pietrzak, Zawal, Stojanovski – 1 pc.

Common Palaearctic species, dragged on all continents. Very variable in colour patern.

Calvia quindecimguttata (Fabricius, 1777)

Material examined: locality no. 5, 30 June2010 r., 02 July 2010 r., coll. Pietrzak, Zawal, Stojanovski – 2 pcs.

Relatively rare South Palaearctic species, recorded on trees and bushes near water reservoirs.

Coccinella septempunctata Linnaeus, 1758

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 3 pcs.; locality no. 2, 18 June –2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 3 pcs.; locality no. 3, 18–21June 2009, 26–28June 2009, coll. Pietrzak, Zawal, Stojanovski – 4 pcs.; locality no. 4, 25 June 2009, coll. Pietrzak – 3 pcs.; locality no. 5, 30 June 2010, 02 July 2010, coll. Pietrzak, Zawal, Stojanovski – 3 pcs.

Common Palaearctic species.

Coccinula quatuordecimpustulata (Linnaeus, 1758)

Material examined: locality no. 1, 22–23 June2009, coll. Pietrzak, Zawal, Stojanovski – 10 pcs.; locality no. 2, 18 June –2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 4, 25 June 2009, coll. Pietrzak – 5 pcs.

South Palaearctic species, occurs in the whole Europe except for North parts. Occurs in herb layer and bushes.

Hipodamia undecimnotata (Schneider, 1792)

Material examined: locality no. 4, 25 June 2009, coll. Pietrzak – 1 pc.

Species occurs in Central and South Europe, Minor and Central Asia, in herb layer and small bushes.

Hipodamia variegata (Goeze, 1777)

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.

Palaearctic species reaches to Central Africa. It was brought to North America. Occurs in herb layer and small bushes.

Oenopia conglobata (Linnaeus, 1758)

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.

South Palaearctic species, which prey between branches of the trees and therefore it is seldom collected in vegetation period.

Propylea quatuordecimpunctata (Linnaeus, 1758)

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 2 pcs.; locality no. 2, 18 June –2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 5, 30 June 2010, 02 July 2010., coll. Pietrzak, Zawal, Stojanovski – 3 pcs.

Palaearctic species, brought to North America. Eurytopic species occurs in different habitats, dry and wet as well.

Tytthaspis sedecimpunctata (Linnaeus, 1758)

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 2, 18 June –2 July 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 3, 18–21 June 2009, 26–28 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.

South Palaearctic species, occurs in the whole Europe excluding Northern areas. Collected in herb layer.

Vibidia duodecimguttata (Poda, 1761)

Material examined: locality no. 1, 22–23 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.; locality no. 3, 18–21 June 2009, 26–28 June 2009, coll. Pietrzak, Zawal, Stojanovski – 1 pc.

Palaearctic species. Their range reached to South of England and Fennoscandia. It occurs in wet habitats, on bushes and in herb layer, prey on *Erysiphales*.

CONCLUSION

Until now 31 ladybird species recorded from Macedonia (JORDANOVA, 2002). This research increases the list of species for next two. But if we taking into account areas around Macedonia (BIELAWSKI & GIESE, 1964) we can suspect about 70 species of ladybirds therefore the knowledge of ladybirds of Macedonia is still unsatisfacted.

REFERENCES

ALBRECHT, Ch. & WILKE T. 2008: Ancient Lake Ohrid: biodiversity and evolution. – *Hydrobiologia*, 615: 103–140

BIELAWSKI, R. & GIESE B. 1964: Ergebnisse der Albanien - Expedition 1961' des Deutchen Entomologischen Institutes. Coccinellidae. - *Beiträge zur Entomologie*, 14: 337 - 353.

JORDANOVA, V. 2002: Neue Angaben über Marienkäfer (Coleoptera: Coccinellidae) aus Republik Mazedonien, Albanien, Grichenland und Türkei, mit eine Revisionsliste der Arten der Balkanhalbinsel. – *Historia naturalis balcanica*, 15: 113-126.

SMILJKOV, S. & SHAPKAREV, J. 1998: Taxonomical investigations of chironomid larvae (Diptera: Chironomidae) from waters of the lowerland region of Ohrid Valley. - *Annual, Biology*, Skopje, 51: 44-49.

SMILJKOV, S. 2001: Ecology and dynamics of Chironomidae fauna larva (Diptera: Chironomidae) from Ohrid Lake. – *Macedonian Academy of Sciences and Arts*. *Section of Biological and Medical Sciences*, 22: 47-56.

STANKOVIĆ, S. 1960: The Balkan Lake Ohrid and Its Living World. – *Monographiae Biologicae*, Uitgeverij Dr. W. Junk, Den Haag, 9: 357 pp.

ZAWAL, A., STOJANOVSKI, S. & SMILJKOV, S. 2010: Preliminary investigation on Odonata from Lake Ohrid (Macedonia). – *Biotechnology & Biotechnological Equipment, 24/2010/SE Special Edition*. Second Balkan Conference on Biology. Plovdiv, Bulgaria, pp: 636-638.

Received: 26 October 2010.