

DISTRIBUTION OF PAPER WASPS (*POLISTES LATREILLE, 1802*) IN LITHUANIA (HYMENOPTERA: VESPIDAE)

EDUARDAS BUDRYS^{1,2,3}, ANNA BUDRIENĖ^{1,3}, BERND GLIWA³

¹Nature Research Centre, Akademijos 2, LT-08412 Vilnius, Lithuania. E-mail: ebudrys@ekoi.lt.

²Vilnius University, M.K.Čiurlionio 21/27, LT-03101 Vilnius, Lithuania.

³Lithuanian Entomological Society, Akademijos 2, LT-08412 Vilnius, Lithuania.

Introduction

According to the available data on distribution of paper wasps in Eastern Baltic states (Pekkarinen & Gustafsson, 1999; Gusenleitner, 2013), only the southern species *Polistes dominula* (Christ, 1791) was known to be present in the Lithuanian fauna. The species was found in the Eastern Baltic countries in large cities (Kaunas and Riga), supposedly nesting and hibernating here in human constructions as a synanthropic species, thus expected to be spreading in urban habitats (Hallanaro & Pylväläinen, 2002). On the other hand, there were no data on a widespread European species *Polistes nimpha* (Christ, 1791).

The Lithuanian Entomological Society has announced the paper wasps (genus *Polistes* Latreille, 1802) as an Insect of the Year of 2011 (Lietuvos...). The aims of this action were: a) presentation of paperwasps to the public interested in the environment, learning to distinguish them from the more abundant yellowjackets (*Vespula* spp.) and to recognise the two paperwasp species; b) countrywide collection of data on distribution of these insects, particularly the current distribution of the presumably invasive southern species *P. dominula*: presence of the latter in native habitats, coexistence and possible competition with the local *P. nimpha*. In addition, we expected to check up the presence of the other, little probable in the Lithuanian fauna paperwasp species: *P. biglumis*, *P. atrimandibularis*, *P. semenowi* and *P. sulcifer*.

Material and Methods

The participants of the Insect of the Year action were encouraged to observe the nests of the paperwasps and to take pictures where characters allowing the identification of the species (face of females and males, the colour of the last sternite of females) were visible.

Collections of Nature Research Centre and Vilnius University (including student collections) were examined as well. Few specimens collected by the authors were fixed in ethanol for possible DNA study and preserved in the Nature Research Centre.

Most of the records were collected during the year 2011. However, some interested participants continued providing data on further observations of paperwasps also during the years 2012 and 2013.

The studied material was observed or collected by V. Bačianskas (V.B.), A. Budrienė (A.B.), E. Budrys (E.B.), A. Čerkauskas (A.Č.), A. Daveika (A.D.), A. Eismantas (A.E.), R. Ferenc (R.F.), B. Gliwa (B.G.), L. Grigaliūnas (L.G.), P. Ivinskis (P.I.), V. Jonaitis (V.J.), V. Natkevičiūtė (V.N.), S. Pakalniškis (S.P.), D. Petronytė (D.P.), T. Ruginis (T.R.), S. Sinkevičius (S.S.), I. Stasiulionytė (I.S.), G. Steiblys (G.S.), G. Švitra (G.Š.) and V. Uselis (V.U.).

List of localities

Anykščiai district	Želtiškiai	55°24'00.0"N, 25°14'40.0"E;
Birštonas municipality	Birštonas (1)	54°36'26.0"N, 24°01'29.0"E;
	Birstonas (2)	54°36'07.5"N, 24°02'11.5"E;
	Škėvonys (Nemuno kilpos RP)	54°36'16.1"N, 24°00'06.5"E;
Druskininkai municipality	Gerdašiai	53°56'45.0"N, 23°52'50.0"E;
Elektrėnai municipality	Lazdėnai	54°44'00.0"N, 24°56'00.0"E;
Ignalina district	Taboras, 1.4 km SW	55°34'43.9"N, 26°20'51.0"E;
Kaunas city	Kaunas	54°54'00.0"N, 23°54'00.0"E;
	Jiesia preserve	54°50'48.7"N, 23°56'08.2"E;
	Žaliakalnis	54°54'14.6"N, 23°54'14.3"E;
Lazdijai district	Ūdininkai	54°13'09.0"N, 23°24'13.0"E;
	Smarliūnai env.	54°07'10.0"N, 23°44'45.0"E;
Molėtai district	Vidžiūnai	55°22'32.4"N, 25°34'55.2"E;
Panevėžys district	Ažuolytė, 1 km S	55°34'23.2"N, 24°07'12.9"E;
Plungė district	Beržoras (1) (Žemaitija Nat. P.)	56°01'32.2"N, 21°49'47.4"E;
	Beržoras (2) (Žemaitija Nat. P.)	56°01'38.2"N, 21°49'58.6"E;
Radviliškis district	Liaubarai	55°29'20.0"N, 23°28'17.3"E;
Raseiniai district	Sargeliai env.	55°28'46.6"N, 23°27'29.5"E;
Šakiai district	Tervydoniai	55°01'40.7"N, 23°26'57.0"E;
Šiauliai city	Šiauliai	55°55'49.0"N, 23°19'37.0"E;
Tauragė district	Beržynė meadows (Viešvilė Nat. R.)	55°08'22.0"N, 22°29'41.0"E;
Varėna district	Čepkeliai Nat. R.	53°59'20.0"N, 24°33'25.0"E;
	Navikai	54°08'00.0"N, 24°01'00.0"E;
	Puvočiai (Dzūkija Nat. P.)	54°06'50.3"N, 24°18'17.5"E;
Vilnius city	Justiniškės	54°43'11.6"N, 25°13'02.4"E;
	Pilaitė (1)	54°42'14.0"N, 25°11'40.0"E;
	Pilaitė (2)	54°42'10.0"N, 25°11'04.0"E;
	Riešė	54°49'00.0"N, 25°14'00.0"E;
Vilnius district	Airėnai II	54°50'44.8"N, 24°57'17.2"E;
	Buivydai, 1 km W	54°49'16.5"N, 24°56'32.0"E;
	Dūkštos	54°49'25.0"N, 24°58'20.0"E;
	Karmazinai	54°49'09.0"N, 24°55'58.0"E;
	Kiemeliai, 1 km SEE	54°51'09.9"N, 25°01'37.4"E;
Zarasai district	Salakas env.	55°34'55.1"N, 26°09'15.9"E;
	Zelva	55°38'37.9"N, 26°06'21.6"E.

List of species

***Polistes nimpha* (Christ, 1791)**

Airėnai II, 02–04 08 2007, 3♀♀ (E.B.); Ažuolytė, 1 km S, 18 06 2009, 1♀ (B.G.); Beržynė meadows, 28 07 2006, 1♀ (E.B.); Beržoras (1), 29 07 2006, 1♀, 01 09 2006, 1♂ (E.B.); Beržoras (2), 29 07 2006, 1♂ (E.B.); Buivydai, 1 km W, 09–11 07 2007, 3♀♀, 09–11 08 2007, 3♀♀ (E.B.); Čepkeliai Nat. R., 19 05 2002, 1♀ (E.B.);

Dūkštos, 19 09 2003, 1♀ (V.J.); Gerdašiai, 23 08 2002, 9♀ 1♂ (P.I.); Karmazinai, 19 09 2003, 4♀ 1♂ (V.J.); Kiemeliai, 1 km SEE, 24–25 07 2006, 1♀ (E.B.); Lazdėnai, 02 10 2011, 1♂ (V.B.); Liaubarai, 11 08 2011, 1♀ (B.G.); Navikai, 31 05 2003, 1♀ (S.P.); Puvočiai, 04 07 2005, 1♂ (I.S.), 16 07 2007, 1♂ (V.N.), 03 08 2011, 1♀ (D.P.); Salakas env., 09 07 2007, 1♀ (V.U.); Sargeliai env., 08 06–11 07 2011, 1♀ (B.G.); Smarliūnai env., 09 06 2002, 1♀ (G.Š.); Škėvonys, 04 08 2010, 1♀ (E.B.); Taboras, 1.4 km SW, 25 07 2011, 1♀ (A.Č.); Vidžiūnai, 06–11 06 2011, 1♀ (S.S.); Zelva, 21 07 2010, 1♀ (B.G.); Želtišķiai, 12 06 2011, 1♀ (A.E.).

***Polistes dominula* (Christ, 1791)**

Birštonas (1), 04 10 2003, 1♂ (T.R.); Birštonas (2), 04 08 2010, 3♀♀ (E.B.); Jiesia preserve, 31 05 2008, 1♀ (E.B.); Justiniškės, 25 07 2011, 1♀ (L.G.); Kaunas, 09 07 2011, 1♀ (G.S.); Pilaitė (1), 26 04 2001, 1♀, 15 08 2011, 2♂ (A.B.), 01 09 2011, 2♂ (E.B.); Pilaitė (2), 08 10 2003, 1♀ (E.B.), 30 09 2007, 1♀ (A.B.); Riešė, 02 07 2013, 1♀ (A.D.); Šiauliai, 15 04 2012, 1♀ (E.B.); Tervydoniai, 25 09 2011, 1♀ (R.F.); Ūdininkai, 04 07 2013, 1♀ (E.B.); Žaliakalnis, 18 07 1995, 1♀, 16 07 2010, 2♀, 1♂, 07 08 2010, 7♂, a nest in an unused post box (E.B.).

The distribution of the two paperwasp species in Lithuania is presented in the Figure 1.

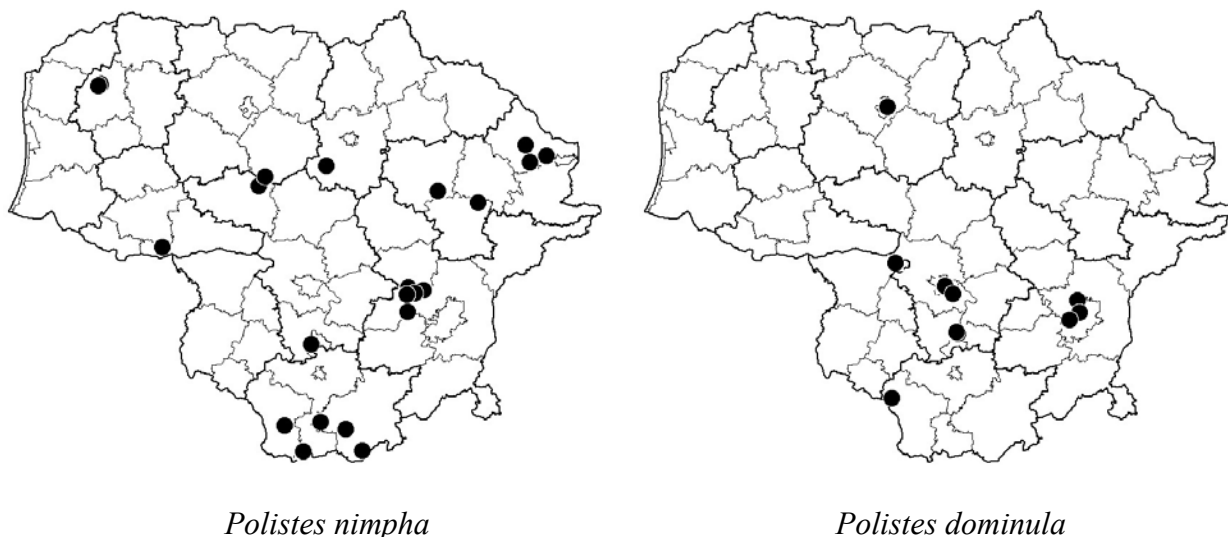


Figure 1. Distribution of *Polistes* species in Lithuania.

Discussion

The results of the study confirm that *Polistes nimpha* is widespread in Lithuania. It is found throughout the country in suitable abandoned or weakly grazed meadow habitats, where it builds its nests mostly on dead dry herb or small shrub stems. It seems to be more abundant in the morainic landscape of the eastern and southern Lithuania, where abandoned or little exploited open grassland and scrubland habitats on dry poor soil are more common. The species seems to be lacking in the areas with intensive agriculture.

Polistes dominula was observed in urban environments of cities (Vilnius, Kaunas, Šiauliai and Birštonas) or their suburbs (Jiesia preserve near Kaunas), also in small settlement (Tervydoniai) and even a village (Ūdininkai), but in all cases close to urban environments and human buildings. The only observed nest of the species was in a

human-made construction (unused post box). The species was never observed closely coexisting with *P. nimpha*.

At the moment, there is no data on decline of *P. nimpha* population in Lithuania. However, the species may be sensitive to the intensification of agriculture and to the afforestation or successional replacement of heaths and dry grasslands by woodlands. The population of the southern, alien and synanthropic in Lithuania species *P. dominula*, in contrast, is expected to increase due to adaptation to urban habitats and climate warming.

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Popiervapsvių (*Polistes Latreille, 1802*) paplitimas Lietuvoje (Hymenoptera: Vespidae)

E. BUDRYS, A. BUDRIENĖ, B. GLIWA

Santrauka

Straipsnyje apžvelgiami Lietuvos entomologų draugijos akcijos "2011 metų vabzdys – popiervapsvė" metu ir vėliau surinktų popiervapsvių stebėjimų rezultatai. Pateikti dviejų Lietuvoje aptiktų popiervapsvių rūšių paplitimo žemėlapiai. Nustatyta, kad pievinė popiervapsvė (*Polistes nimpha*) yra paplitusi visoje Lietuvoje, tinkamose apleistų pievų buveinėse nereta rūšis. Duomenų apie jos populiacijos mažėjimą nėra, nors ši rūšis gali būti jautri žemdirbystės intensyvėjimui ir sausų pievų užsodinimui bei sukcesiniam užaugimui mišku. Tikėtinas pietinės, svetimžemės ir sinantropinės Lietuvoje europinės popiervapsvės (*Polistes dominula*) populiacijos didėjimas dėl šios rūšies prisitaikymo žmogaus gyvenviečių aplinkai ir dėl klimato šiltėjimo.

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