

RECORDS OF TWO SOUTHERN BEE SPECIES, *ANTHIDIUM OBLONGATUM* (ILLIGER, 1806) AND *XYLOCOPA VALGA* (GERSTAECKER, 1872) (HYMENOPTERA: MEGACHILIDAE, APIDAE), IN LITHUANIA

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Introduction

One of the most diverse genera in the family Megachilidae is *Anthidium* Fabricius, 1804. It consists of nearly 200 species found in all continents, except Australia (Michener, 2007; Gonzalez & Griswold, 2013; Ascher & Pickering, 2020). Bees of this genus usually construct nests in cavities of stones, rock, soil or wood (O'Brien *et al.*, 2012). The highest species diversity is found in subtropical biomes; only a few representatives of this genus inhabit temperate regions.

Up to now, two species were known in Lithuanian fauna, *A. manicatum* (Linnaeus, 1758) and *A. punctatum* Latreille, 1809. *A. oblongatum* (Illiger, 1806) is similar to the larger and rather common in Lithuania *A. manicatum*; the female may be distinguished by smooth and weakly concave lower edge of clypeus and small lateral angles on the scutellum. Males can be separated by more extensive yellow paired markings on their abdominal terga, much smaller projections on T6 and a bilobate T7, instead of smaller quadruple markings of terga, long lateral projections on T6, and tridentate T7 in *A. manicatum* (Hoebeke & Wheeler, 1999; Scheuchl, 2006).

There are about 470 species in the genus *Xylocopa* Latreille, 1802 worldwide (Michener, 2007). Species of this genus usually inhabit sparse woodlands and wooded meadows, as well as rural and urban areas, where they burrow nesting cavities in dead tree trunks, hollow plant stems, or wooden man-made structures (Panfilov & Berezin, 2012; Huflejt & Gutowski, 2016). Among the bees of Northern and Central Europe, *X. valga* (Gerstaecker, 1872) is one of the largest species, with the body length exceeding 20 mm. Females and males little differ in their morphology, both are black with sparse brownish–black hairs on their shiny body surface. Wings are dark brown with strong metallic purple–bluish shine. In the female, the outer surface of hind tibia has a broad hairless tuberculate strip, covering more than 2/3 of its length (Michener, 2007; Panfilov & Berezin, 2012; He & Zhu, 2020; Farook *et al.*, 2021).

The aim of this publication is to present the first record of *A. oblongatum* and the new observations of *X. valga* in the territory of Lithuania; the latter species has not been observed in this country during a period of nearly 80 years.

Material and Methods

Observers and collectors: E. Budrys (abbreviated as E.B.), L. Černiauskas (L.Č.), R. Krupas (R.K.), E. Misiukevičius (E.M.), A. Palionis (A.P.), L. Pauliukienė (L.P.), G. Skujienė (G.S.), E. Steponavičė (E.S.).

The specimen of *A. oblongatum* was collected using yellow pan trap and preserved in the Zoological Museum of Vilnius University (Vilnius). The specimens of *X. valga* collected by A. Palionis are preserved in the Kaunas Tadas Ivanauskas Zoological Museum (Kaunas). None of recently recorded *X. valga* specimens was collected; all specimens were observed, their photos and video records were published on the web.

List of localities

Locality	Administrative district	Coordinates (LAT, LONG)
Amaliai	Kaunas city	54.9000, 24.0167
Baisogala	Radviliškis mun.	55.6370, 23.7180
Bugailiškiiai	Kupiškis mun.	55.7539, 25.2492
Didžioji Riešė	Vilnius mun.	54.8056, 25.2583
Ežerėlis	Kaunas mun.	54.8833, 23.6000
Puskelniai	Marijampolė mun.	54.6028, 23.3913
Ramygala	Panevėžys mun.	55.5105, 24.3030
Rožynas	Panevėžys city	55.7481, 24.3617

List of species

MEGACHILIDAE

Anthidium oblongatum (Illiger, 1806)

Bugailiškiiai (yellow pan trap), 15 08 2021, 1♀ (E.B. & G.S.).

APIDAE

Xylocopa valga (Gerstaecker, 1872)

Didžioji Riešė, 25 08 2019, 1 spec. (R.K.: video and photo on Facebook); Ežerėlis, 07 09 2021, 1♀ (E.M.: video on Facebook); Amaliai, 16 09 2021, 1♀ (E.S.: photo on Facebook); Puskelniai, 08 07 2022, 1♀ (L.Č.: photo on Facebook); Rožynas, 25 07 2022, 1♀, on *Lathyrus odoratus* L. (L.P.: photo). Unpublished collection specimens: Baisogala, 30 07 1928, 1♀ (A.P.); Ramygala, 20 07 1925, 1♀ (A.P.).

Comments. I corrected text at the end Monsevičius (1995) named this species as extinct and listed 121 specimens, collected before 1934 in Panevėžys, Švenčionys, Vilnius districts. Later Monsevičius (2007) also listed the species as extinct and provided 6 localities, with last observation in 1944. Giedrimienė *et al.* (2014) named the species as extinct, listed 76 specimens collected in Panevėžys environs in 1934–1939.

Discussion

Anthidium oblongatum is native to Europe, mostly occurring in southern and temperate places with a warmer climate, now also present in Asia, North Africa, and Middle East (Hoebeke & Wheeler, 1999; Levchenko 2020). The species was introduced

into U.S. in the 1990s and has become invasive because of its ability to adapt well to the anthropogenic habitats (Hoebeker & Wheeler, 1999). Although present in several regions of Poland, it is considered rare (Boranski *et al.*, 2019). The species has been recorded in Estonia (eElurikkus, 2021), Belarus, Ukraine, and southern Russia (Levchenko, 2020). *A. oblongatum* is of Least Concern (LC) in Europe (Nieto *et al.*, 2014).



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Figs. 1–2. 1 – *Anthidium oblongatum* ♀ (photo E. Budrys); 2 – *Xylocopa valga* ♀ (photo E. Misiukevičius)

Xylocopa valga is a Palearctic bee species, present in the southern regions of Europe, Asia, the Middle East, as well as in the northern part of Africa (Panfilov & Berezin, 2012; He & Zhu, 2020; Farook *et al.*, 2021). Although being considered as LC in Europe (Nieto *et al.*, 2014), *X. valga* is protected in several European countries: it has been regarded as regionally extinct (RE) in Lithuania (Monsevičius, 2007), Latvia (He & Zhu, 2020) and Estonia (eElurikkus, 2021), critically endangered (CR) in Poland (Huflejt & Gutowski, 2016), rare in Ukraine (Akimova, 2009) and vulnerable (VU) in Russia (Panfilov & Berezin, 2012). In Belarus, it used to inhabit most of the country some decades ago (Prišepčik, 2006; cited after Huflejt & Gutowski, 2016); the current conservation status of this species there is undefined.

It is not clear, if there are reproducing populations of the two bees in Lithuania, or only migratory individuals have been observed. Considering the current climate warming, we may expect an increase of their northern populations and shifting of their distribution ranges northwards. Therefore, these northern populations, including the Lithuanian one, may be important for the survival of the species in the conditions of climate change.

X. valga is a vulnerable species due to the dependence of this bee on insolated large deadwood. This nesting substrate is usually not available in the woodland habitats due to the typical forestry practices; therefore, this bee needs special conservation measures. Therefore, we recommend to include *X. valga* in the Red Data Book and the list of protected species of the Republic of Lithuania.

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Dviejų pietinių bičių *Anthidium oblongatum* (Illiger, 1806) ir *Xylocopa valga* (Gerstaecker, 1872) (Hymenoptera: Megachilidae, Apidae) stebėjimai Lietuvoje

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Santrauka

Straipsnyje pateikiami nauji duomenys apie dvi pietines bičių rūšis: pirmą kartą Lietuvoje rastą lieknąją vilnabitę (*Anthidium oblongatum* (Illiger, 1806), Megachilidae) ir prieš beveik 80 metų išnykusią mėlynąją bitę (*Xylocopa valga* (Gerstaecker, 1872), Apidae). Pateikiamos abiejų rūšių sugavimo ar stebėjimų vietos bei datos, individų skaičius ir jų lytis, stebėtojai ar rinkikai. Stebėjimai kaimyninėse šalyse bei šiltėjantis klimatas leidžia manyti, kad šios bičių rūšys Lietuvoje turi galimybę plisti ateityje. Mėlynoji bitė yra jautri antropogeniniams poveikiams dėl lizdų darymo saulės apšviestoje stambioje negyvoje medienoje, todėl ji laikoma pažeidžiama ir saugoma daugelyje šalių. Šią rūšį būtina sugražinti į Lietuvos raudonąją knygą bei LR saugomų rūšių sąrašą.

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¹ Corrected in a pdf version. Paragraph should be: Monsevičius (1995, 2007) treated this species as extinct and listed 8 specimens from 6 localities in Panevėžys, Švenčionys, Vilnius districts, with the last observations in 1944. Giedrimienė et al. (2014) named the species as extinct, listed 76 specimens collected in Panevėžys environs in 1934–1939.