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# FIRST RECORD OF *DRYUDELLA LINEATA* MOCSÁRY, 1879 (HYMENOPTERA: CRABRONIDAE) ON THE TERRITORY OF UKRAINE

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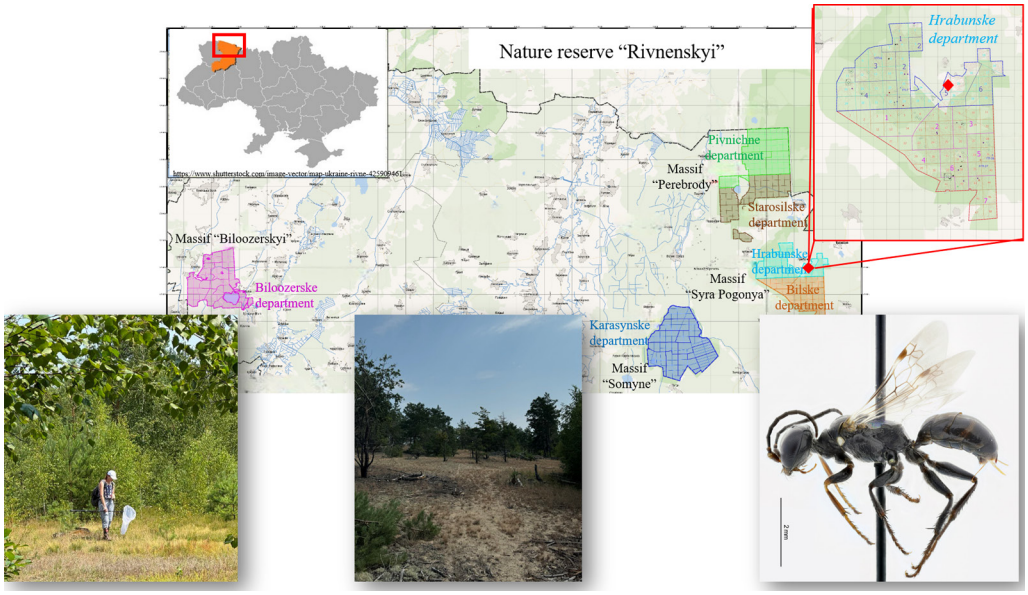
**Background.** *Dryudella* is a Holarctic genus, which includes 58 species. The majority of them, however, 29 species in particular, are common in Palearctic. On the territory of Ukraine the genus was represented by four species, collected in the Eastern, Southern and Central Ukraine. The biology of the species of this genus has been insufficiently studied; its certain aspects having been studied only for a few representatives of the genus.

**Materials and Methods.** A specimen of a wasp was captured with the help of an entomological net using the method of selective catching on the territory of the Hrabunske department of Nature Reserve "Rivnenskyi" (https://www.inaturalist.org/observations/250256988). The species of the wasp was identified using appropriate descriptions and keys. The biotope in which the wasp was captured was identified with the help of the National Catalogue of Biotopes of Ukraine.

**Results and Discussion.** A new species of wasp of the genus *Dryudella* was registered in the territory of Ukraine – *Dryudella lineata* Mocsáry, 1879 of the family Crabronidae (Apoidea: Crabronidae: Astatinae). The specimen female *D. lineata* was captured in July 2024 in the territory of Nature Reserve "Rivnenskyi", in a pine forest in a sandy area. *D. lineata* is a rare and scarce species of wasp. It has only been recorded in the territory of eight countries.

**Conclusions.** First discovery of *D. lineata* in Ukraine, in particular in Nature Reserve "Rivnenskyi". The sample was inventoried (E20 – 3375) and stored in the entomological collection of the Zoological Museum of the Ivan Franko National University of Lviv.

**Graphical abstract**




***Keywords***: Hymenoptera, *Dryudella lineata,* insects, new record, Ukraine, Nature Reserve "Rivnenskyi"

## INTRODUCTION

The genus *Dryudella* Spinola, 1843 belongs to the family Crabronidae, subfamily Astatinae. Until 1969, genus *Dryudella* was considered synonymous and equated to the genus *Astata* Latreille (Parker, 1969). It was only in 1969 that Parker distinguished the genus from synonymy, 1796 (Olszewski *et al*., 2021).

*Dryudella* is a Holarctic genus, while the majority of species (29) occur in Palearctic (Bohart & Menke, 1976). In the world's fauna, the genus is represented by 58 species (Pulawski, 2024). Of these, four species have been recorded in the territory of Ukraine: *Dryudella picticornis* (Gussakovskij, 1927), *D. pinguis* (Dahlbom, 1832), *D. stigma* (Panzer, [1807–1809]), *D. tricolor* (Vander Linden, 1829). The specimens were collected on the territories of Kyiv, Cherkassy, Kharkiv, Kherson and Crimea regions by 2010 (Pulawski, 2024).

Three species (*D. pinguis*, *D. stigma*, *D. tricolor*) were included in the list of Male Polissia wasp species, but their exact location was not mentioned (Voblenko *et al*., 1996).

The biology of most representatives of the genus *Dryudella* has been little studied (Bohart & Menke, 1976). It is known that representatives of the Astatini build their nests in the form of burrows in the ground and fill them with paralysed prey (Olszewski *et al*., 2021). These wasps build their nests in different types of soil. They can be single or multiple cell. Among the prey, nymphs of Heteroptera were most common, especially representatives of the Lygaeidae family, and less often Alydidae, Coreidae, Cydnidae, Pentatomidae, Reduviidae, Rhopalidae and Scutelleridae (Bohart & Menke, 1976).

The species of wasp *Dryudella lineata* Mocsáry, 1879 – was recorded by us for the first time in the territory of Ukraine, in particular on the territory of Nature Reserve

"Rivnenskyi", the Hrabunske department. The reserve is located in the north of Ukraine (Rivne region). It belongs to Male Polissia. It consists of four distant massifs: Biloozerskyi, Somyne, Syra Pogonia and Perebrody with the total area of 42288,7 ha. Within the massif there are six departments: Biloozerske, Bilske, Hrabunske, Karasynske, Starosilske and Pivnichne. The territory of the reserve is characterised by the predominance of swamps, which occupy 20,287.8 ha of the total area and the remaining 21,292.2 ha are forests (Chronicle of nature, 2020).

*D. lineata* was first described by Mocsáry, A. in 1879 (Mocsáry, 1879). The specimen was captured in the territory of Hungary.

## MATERIALS AND METHODS

The specimen of *D. lineata* was collected by the author S. Pytel-Huta using an entomological net by the method of selective catching in the territory of Nature Reserve "Rivnenskyi", Hrabunske department, quarter 25 (**Fig. 1**).

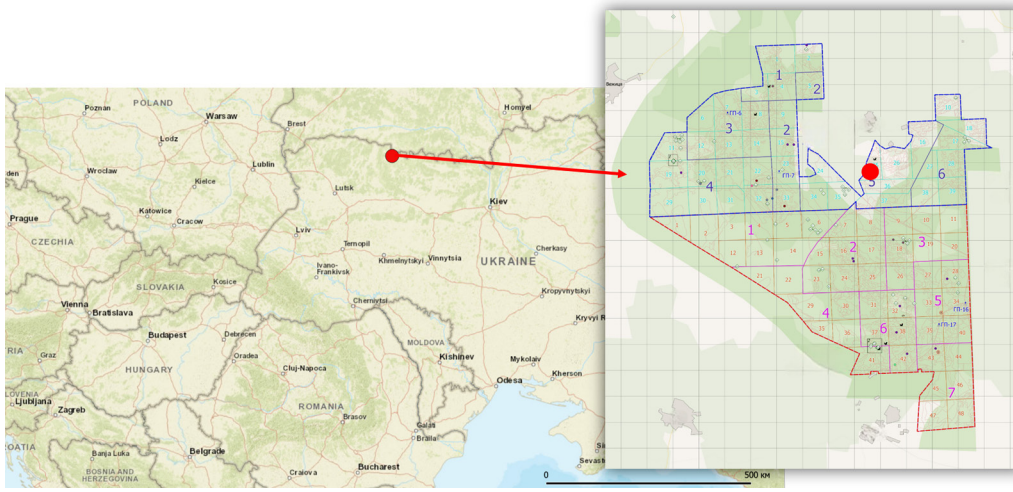



**Fig. 1.** Map of Hrabunske department (Nature Reserve "Rivnenskyi"), the site of the discovery

The National Catalogue of Biotopes of Ukraine and the Habitats Directive (classification EUNIS) were used to determine the type of biotope in which the wasp was captured (Onyshchenko, 2016; Kuzemko *et al*., 2018). Wasp species were identified using appropriate descriptions and keys using Konus Crystal 7x–45x binoculars (Konus, Italy) (Bitsch *et al*., 2007; Dollfuss, 1991; Pulawski, 1955).

The captured specimen of *D. lineata* complies with the limits for the use of natural resources within the reserve for the year 2024 (No. 523/2024).

*D. lineata* are stored in the entomological collection of the Zoological Museum of Ivan Franko Lviv National University (ZMD). The inventory number is E20 – 3375.

## RESULTS AND DISCUSSION

Hrabunske department is part of the Syra Pohonya massif in the Rokytniv district. It covers an area of 4,499.0 hectares. The massif lies in the proximity of Vezhitsa, Bilsk, Hrabun and Stare Selo villages (**Fig. 2**).

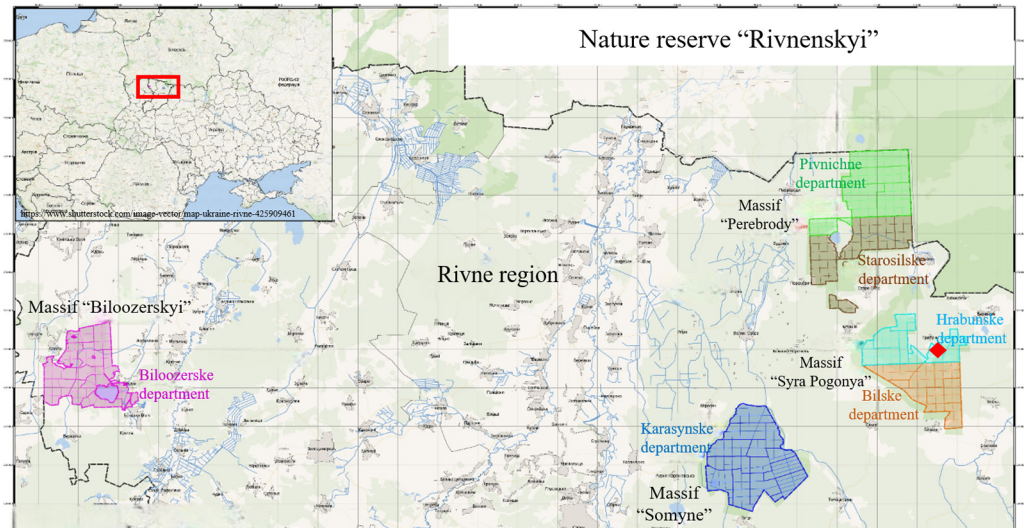



**Fig. 2.** Map of the massifs of Nature Reserve “Rivnenskyi”

The Hrabunske department belongs to the Nizhnyhorin district, Volyn Polissia region, according to physical and geographical zoning.

***Dryudella lineata* Mocsáry, 1879** belongs to the family Crabronidae, subfamily Astatinae.

**Material**: ♀, 17.07.2024 Hrabunske, qr. 25.

The specimen of this species was captured in the reserve’s characteristic biotope D2.2.1 (Lichen Scots pine forests (sand dunes)) (**Fig. 3**) (Kuzemko *et al.*, 2018). According to the EUNIS classification: G3.42112 Subcontinen tal lichen Scots pine forests Onyshchenko, 2016).

**Fig. 3.** The type of biotope (D2.2.1) in which a specimen of *D. lineata* was captured

Biotope D2.2.1 is represented by dry pine forests on sandy soils with a considerable amount of lichen (Kuzemko *et al.*, 2018). The most characteristic biotope type for the north of Volyn and Zhytomyr Polissia. The specimen was captured in a sandy area.

*D. lineata* is a rare species of wasp. It has been recorded in only eight countries: the Czech Republic, Hungary, Kazakhstan, Romania, russia, Serbia, Slovakia, Switzerland (Józan, 1986; Lukáš, 2003; Bogusch *et. al.*, 2007; Smetana *et. al.*, 2010; Józan, 2011; Pulawski, 2024).

***Description: Dryudella lineata*** – female: body length 6–7 mm, black, the front tibia and tarsus are light red in colour, while the middle and hind tibia and tarsus are a much darker shade of dark brown. Lower hind femur with long setae (**Fig. 4**).

The mandibles are light red at the base and dark at the tip. Antennae are black. The frons is slightly dotted, shiny. Pronotum weakly punctate, glossy, with a yellow spot anteriorly. The dorsal feid of the propodeum is irregularly transversely slightly wrinkled, punctate.

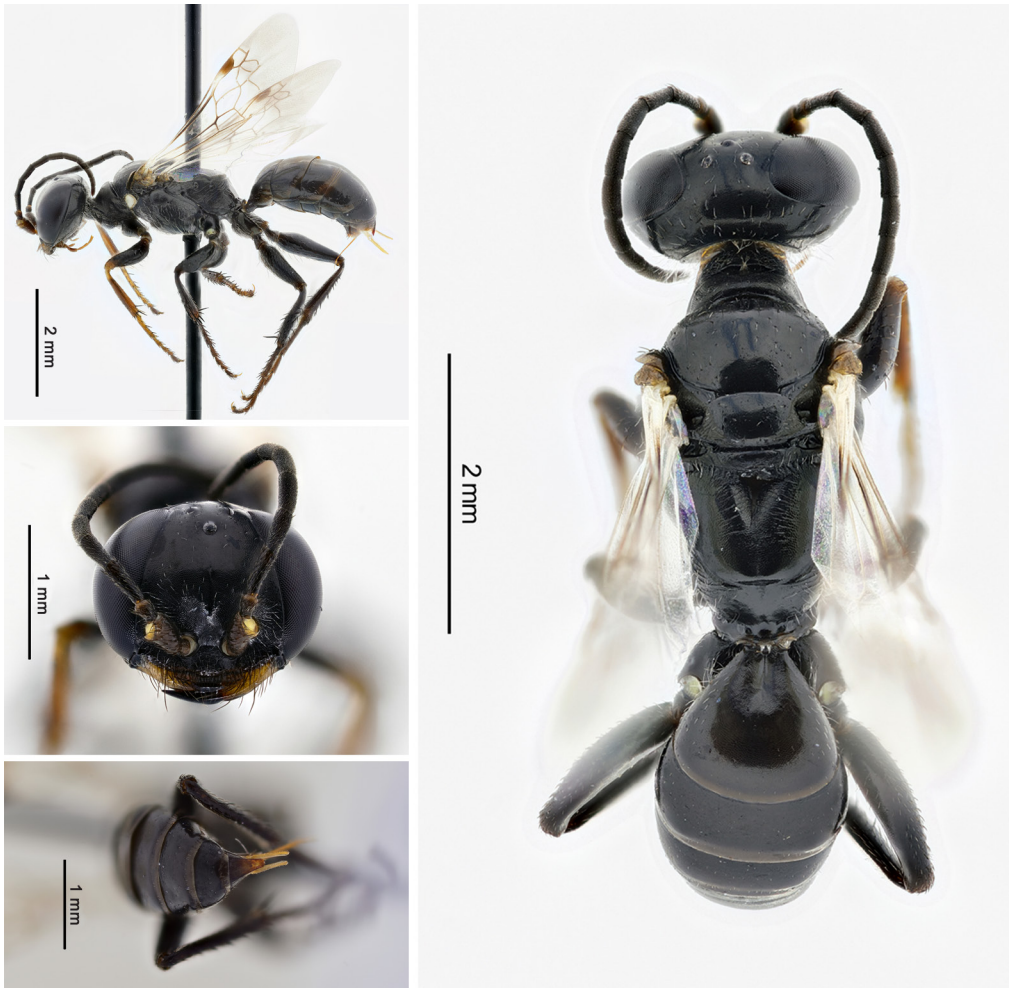



**Fig. 4.** *Dryudella lineata* Mocsáry, 1879, female, side, dorsal view, head, pygidium. Photo credit: by Denys Khrapov

The pronotallobus is yellow. Tegulas are light red. Forewings with three submarginal cells. The marginal cell is short. The veins of the wings are brown at the base and yellow at the front of the pterostigma. The first submarginal vein terminates at the border of submarginal cells I and II. Metanotum wrinkled, slightly depressed behind.

The abdomen is black, shiny. The pygidial field is broad, rounded at the end, light brown at the end, shiny (**Fig. 4**).

## CONCLUSIONS

A rare species of wasp – *D. lineata* (Hymenoptera: Crabronidae) – was discovered on the territory of the Nature Reserve "Rivnenskyi" as part of the author's dissertation research. This is the first discovery for the territory of Ukraine.

## ACKNOWLEDGEMENTS

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The author also extends gratitude to D. Khrapov for photographing the captured specimen of D. *lineata.*

## COMPLIANCE WITH ETHICAL STANDARDS

**Conflict of Interest:** the authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

**Human Rights:** this article does not contain any studies with human subjects performed by any of the authors.

**Animal studies:** all institutional, national and institutional guidelines for the care and use of laboratory animals were followed.

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## ПЕРША РЕЄСТРАЦІЯ ВИДУ *DRYUDELLA LINEATA* MOCSÁRY, 1879 р. (HYMENOPTERA: CRABRONIDAE) НА ТЕРИТОРІЇ УКРАЇНИ

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**Вступ.** *Dryudella* – голарктичний рід, що включає 58 видів. Проте більшість із них, зокрема, 29 видів, поширені в Палеарктиці. На території України рід був представлений чотирма видами, зібраними у східній, південній та центральній Україні. Біологія роду мало вивчена, і окремі певні особливості біології досліджені лише для небагатьох представників роду.

**Матеріал і методи.** Екземпляр оси спіймали за допомогою ентомологічного сачка методом вибіркового відлову на території Грабунського відділення Рівненського природного заповідника (https://www.inaturalist.org/observations/250256988). Визначення виду оси здійснили за відповідними описами та ключами. Біотоп, у якому спіймали *D. lineata*, визначили за допомогою Національного каталогу біотопів України.

**Результати.** На території України зареєстровано новий вид ос роду *Dryudella* – *Dryudella lineata* Mocsáry, 1879 родини Crabronidae (Apoidea: Crabronidae: Astatinae). Самку *D. Lineata* зловили в липні 2024 року на території Рівненського природного заповідника, в сосновому лісі на піщаній дюні. *D. lineata* – нечисленний вид ос. Зафіксований на території лише восьми країн.

**Висновки.** Перша реєстрація виду *D. lineata* в Україні, зокрема, на території Рівненського природного заповідника.

Зразок інвентаризовано (E20 – 3375) та передано на зберігання в ентомологічній колекції Зоологічного музею Львівського національного університету імені Івана Франка.

***Ключові слова:*** Hymenoptera, *Dryudella lineata*, комахи, нова знахідка, Україна, Рівненський природний заповідник

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