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Stellaria ruderalis M. Lepší, P. Lepší, Z. Kaplan et P. Koutecký, a new species record for the flora of Ukraine

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Abstract. *Stellaria ruderalis* is an annual (semi)ruderal species from the *S. media* group, which has been recently published by Lepší et al., therefore, its distribution range in Europe is insufficiently known. This paper is based on field exploration of 39 localities of *S. media* s.l. in the Lviv region, Western Ukraine. The first report of *S. ruderalis* in Ukraine comes from Dmytre village, where it grows at roadsides and arable field edges in a semiruderal habitat of the alliance *Aegopodion podagrariae*. As only a single population was found, *Stellaria ruderalis* is obviously still spreading in Western Ukraine, a fact which was reported already for northern Central Europe. This record represents the northeasternmost locality of the species so far known.

Keywords: new record, *Stellaria media* group, *Stellaria ruderalis*, Ukraine.

INTRODUCTION

The *Stellaria media* group comprises in Europe four species, *S. media* (L.) Vill., *S. pallida* (Dumort.) Crép., *S. neglecta* Weihe, and the recently published one, *S. ruderalis* M. Lepší, P. Lepší, Z. Kaplan et P. Koutecký (Chatter and Heywood 1964; Sobey 1981; Lepší et al. 2019). Up to now, *S. media*, *S. pallida*, and *S. neglecta* were recognized for the flora of Ukraine (Klokov 1952; Mosyakin and Fedoronchuk 1999). These species are morphologically close and also overlap in their distribution range. Therefore, either *S. media* s. l., or more controversially, several microtaxa are reported in the literature (Whitehead and Sinha 1967; Colasante et al. 1999). However, a complex analysis of morphological features (i.e., structure of the inflorescence, length of petals, number of stamens, and shape of tubercles on the seed surface) together with karyological and molecular data allowed distinguishing four species within *S. media* group in Europe (Lepší et al. 2019).

The newly described *S. ruderalis* is suggested to be an allopolyploid originated from *S. pallida* and *S. neglecta* (Lepší et al. 2019), hence it combines

some morphological features of both species. *Stellaria ruderalis* differs from *S. media* s. str. by long (longer than wide) conical tubercles on the seed surface with no or few papillae on the upper part of their surface, a more condensed inflorescence at the juvenile stage. Such long tubercles are also present on the seeds of *S. neglecta*. However, *S. ruderalis* differs from *S. neglecta* by lower number of stamens (3–5(10) vs. 8–10) and shorter petals, which are not longer than sepals. *Stellaria pallida* distinctly differs from all other species by smaller seeds (up to 1 mm), a low number of stamens (1–3, rarely 4), a minute or absent petals, and generally smaller plants. Up to now, *Stellaria ruderalis* is known from the Czech Republic, Slovakia, Austria, Hungary, Slovenia, Croatia, Serbia, Italy (including Sardinia), and Greece. It grows in disturbed ruderal communities such as grasslands, edges of ruderal scrubs, forests and tree plantations, along roads, railways, and in disturbed river habitats (Lepší et al. 2019). For the Lviv region in Western Ukraine, only *S. media* (s.l.) is known (Zelenchuk 1991, Sytschak and Kagalo 2010). Therefore, we were interested if *Stellaria ruderalis* is also occurring in Western Ukraine.

MATERIALS AND METHODS

Vouchers of *Stellaria media* s.l. in the herbarium of the State Museum of Natural History of the National Academy of Sciences of Ukraine (LWS) were initially revised. Field work was conducted in May and June 2020 in Lviv and its surroundings. In total, 39 localities of *S. media* s.l. were explored, including 11 localities in Lviv and 28 localities in the adjacent towns and villages (Zymna Voda, Kholodnovidka, Konopnytsia, Dibrivky, Obroshyno, Stavchany, Schyrets, Horbachi, Dmytre, Popeliany, Kaguiv, Dorohovyzh, Rozvadiiv, Medenychi, Hirske, Kolodrubyy, Piatnychiany, Pukenychi, Vilhivtsi, Zaritschia, Nova Skvariava, Griada, Kulykiv, Grusiatychi, Khodorkivtsi, Nestanychi, and Vidnyky). Plants were randomly sampled and identified using a $\times 20$ magnifier. Photos of flowers and seeds were made with a Dino-Lite Pro AM-413ZT digital microscope.

RESULTS AND DISCUSSION

As expected, no herbarium vouchers of *S. ruderalis* were found in LWS. This can be easily explained with the fact that such a common species group like *Stellaria media* s.l. is usually neglected by botanists. Among all investigated localities, only one comprised *S. ruderalis*, where it was growing parapatrically with *S. media*



Figure 1. Habitat of *Stellaria ruderalis* in Dmytre village (Pustomyty district, Lviv region, Ukraine).

s.str. The following herbarium voucher has been deposited in LWS and is available online via <http://dc.smnh.org/>. *Stellaria ruderalis*, Ukraine, Lviv region, Pustomyty district, Dmytre village, near the cemetery, 49.60507°N 23.87046°E, alt. 270 m a.s.l, leg. Andriy Novikov & Mariia Sup-Novikova 20.05.2020, det. Andriy Novikov 17.06.2020, confirm. Clemens Pachschröll (LWS 118505). Plants of *S. ruderalis* were growing along both roadsides (Figure 1), at the edge of an arable field and among tree plantings together with *Aegopodium podagraria* L. (dominant), *Cirsium arvense* (L.) Scop., *Chaerophyllum aromaticum* L., *Dactylis glomerata* L., *Lamium album* L., *Taraxacum officinale* agg., *Urtica dioica* L., and *Veronica chamaedrys* L. This is a semiruderal and



Figure 2. Close-up view of *Stellaria ruderalis* flowers from Dmytre village.



Figure 3. Flower of *Stellaria ruderalis* from Dmytre village.

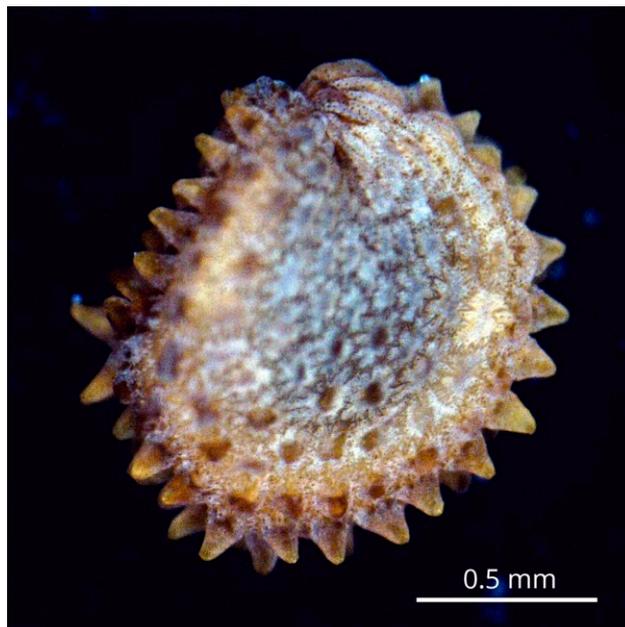


Figure 4. Seed of *Stellaria ruderalis* from Dmytre village.

nutrient-rich habitat of the alliance *Aegopodion podagrariae* Tüxen 1967 (Solomakha 2008; Láníková et al. 2009), a vegetation type well known for Lviv (Kucheryvyi et al. 1991). Explored plants of *S. ruderalis* had dense inflorescences (Figure 2), 4–6(8) stamens, petals significantly shorter than sepals (Figure 3), seeds longer than 1 mm and conical tubercles on the seed surface (Figure 4), which allowed us to clearly distinguish it from *S. media* s.str. and other related taxa. Although we expected to find *S. ruderalis* easily, in all other explored localities only *S. media* s.str. was growing. In our opinion, it supports the fact that *S. ruderalis* is currently still spreading in northern Central Europe including Western Ukraine (Lepší et al. 2019).

This is the first report of *S. ruderalis* for Ukraine. The nearest locations of *S. ruderalis* were reported from Tatabánya city in Hungary (about 590 km away), Kuchyňa village in Slovakia (about 630 km away), as well as from Břeclav city (about 620 km away) and Vranovice village (about 630 km away) in the Czech Republic (Lepší et al. 2019). Hence, this is the northeasternmost locality of *S. ruderalis* in Europe so far known. Our finding gives a hope that *S. ruderalis* will be soon discovered in other parts of Ukraine as well as other countries of Eastern and Southeastern Europe.

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