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A new wolf spider species in the genus *Alopecosa* Simon, 1885 (Araneae: Lycosidae) from Eastern Europe

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The wolf spider genus *Alopecosa* Simon, 1885, contains 160 named species (Platnick 2012) and the type species of the genus is *A. fabrilis* (Clerck, 1757), which is a Palaearctic species like most species in the genus (Platnick 2012). The taxonomic structure of the genus has been studied in two revisions; Lugetti & Tongiorgi (1969) divided 24 species of European *Alopecosa* into five species groups and Dondale & Redner (1979) divided seven species from North America into three groups. Many species currently in *Alopecosa* do not appear to be related to the type species; hence the genus is polyphyletic and should be divided into several genera (Marusik & Kovblyuk 2011). Faunistic revisions of *Alopecosa* have been produced for Italy (Lugetti & Tongiorgi 1969), Romania (Fuhn & Niculescu-Burlacu 1971), North America (Dondale & Redner 1979), China (Song *et al.* 1999) and Sweden (Almqvist 2005). In the Ukraine and European Russia, 18 and 22 species have been reported, respectively (Mikhailov 1997, 2000). Twenty species of *Alopecosa* have been described since the year 2000 (Platnick 2012), including one from Central Europe (Czech Republic and Slovakia) (Buchar 2001), one from Greece (Buchar 2001), one from Southwestern Russia and six species from Western Kazakhstan (Ponomarev 2007, 2008, 2009).

The aim of the present paper is to describe a new *Alopecosa* from Eastern Europe.

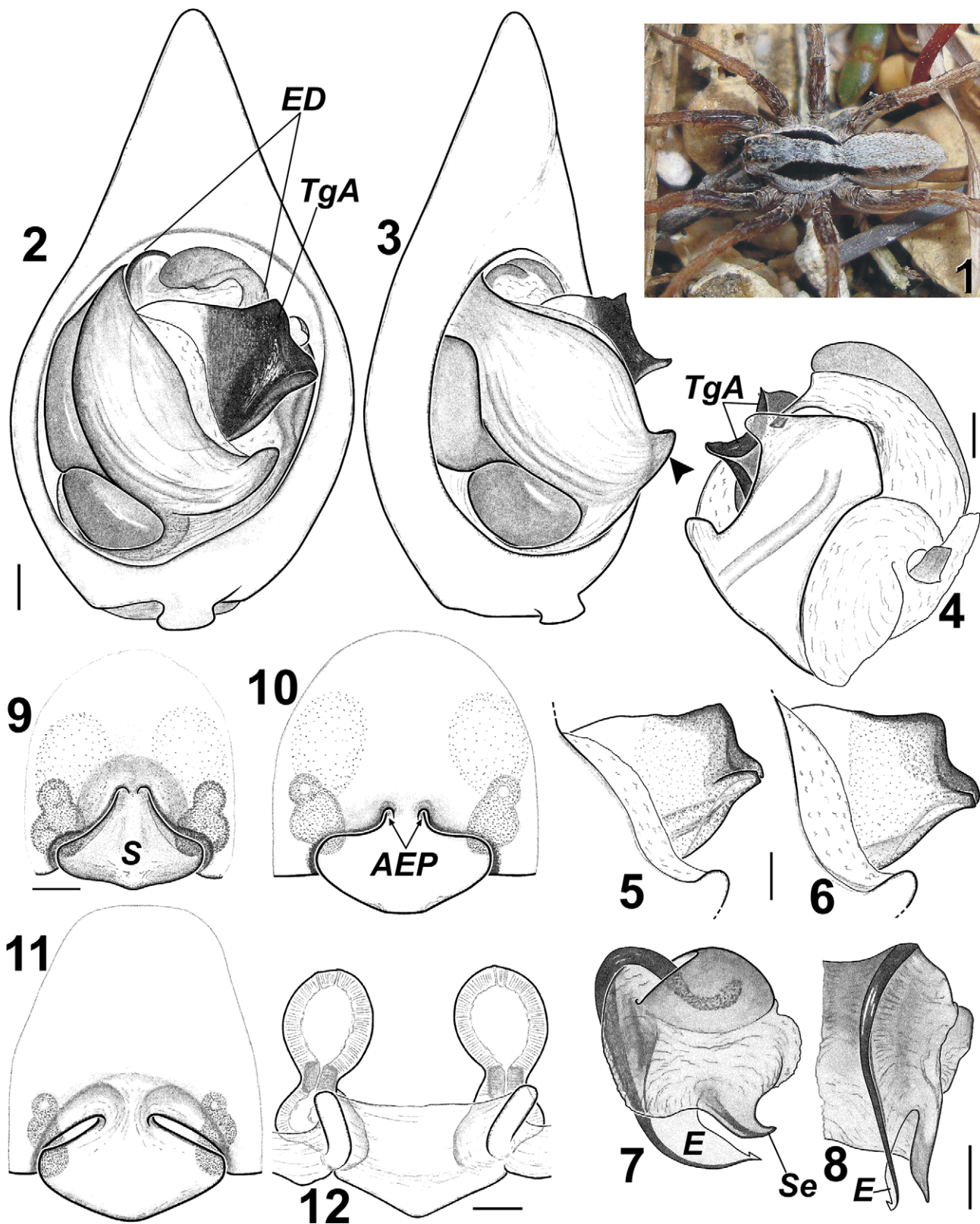
The following abbreviations are used in the text: a—apical; d—dorsal; pl—prolateral; rl—retrolateral; v—ventral. Scanning electron micrographs (SEM) were taken with an EVO-40 XVP (LEO1430VP) scanning electron microscope in the Interdisciplinary Laboratory, Institute of Arid Zones, South Scientific Centre RAS, Rostov-on-Don. Leg and pedipalp segments were measured after their separation from the cephalothorax. Colouration of spiders was described from specimens preserved in 75% ethanol with glycerin added (9:1 by volume). All measurements are in millimetres. Specimens used for this study are housed in the following museums/collections: CP—private collection of A.V. Ponomarev, Institute of Arid Zones, South Scientific Centre RAS, Rostov-on-Don, Russia; TNU—National Arachnological Collection, Zoology Department, V.I. Vernadsky Taurida National University, Simferopol, Ukraine (curator M.M. Kovblyuk); ZMMU—Zoological Museum of the Moscow State University, Russia (curator K.G. Mikhailov).

Alopecosa kovblyuki Nadolny & Ponomarev, sp. nov.

Figures 1–14.

Type material: Holotype 1 ♂ (ZMMU) RUSSIA, Rostov area, Ust-Donetsk Distr., Razdorskaya Village, Pukhlyakovskie Sklony, 47°31'18"N 40°36'37"E, 7–14.04.2004 (A.V. Ponomarev).

Paratypes: RUSSIA. **Rostov area:** 1 ♂ (CP-25.11.29/2), Rostov-on-Don, Shchepkinskiy Forestry, 47°20'N 39°45'E, May 2010 (V.V. Alexandrov). Ust-Donetsk Distr., Razdorskaya Village, 47°32'30"N 40°38'50"E: 1 ♂ (ZMMU), valley edge, *Caragana frutex*, 17–26.04.2010 (A.V. Ponomarev); 1 ♂ (CP-25.11.29/1), valley edge, *Caragana frutex*, 17–26.04.2010 (A.V. Ponomarev). UKRAINE. **Crimea**, Dzhankoy Distr.: 14 ♂♂ 7 ♀♀ (TNU-SO1/1, SO5, SO6/1, SO11, SO14/1, SO26/3, SO27/3, SO28/2, SO45/2, SO46/2, SO49/2, SO56/5, SO58/3, SO66/3, SO70), environs of Solenoe Ozero Village, 45°53'N 34°27'E, hand collected and pitfall traps, 21.10.2008, 12.03–22.10.2009 (A.A. Nadolny); 8 ♂♂ 3 ♀♀ (ZMMU), 6.5 km N Solenoe Ozero Village, 45°56'35"N 34°27'06.7"E, *Phragmites australis* & *Carex* sp. on the mollusks' shells bar, pitfall traps, 26.03–9.04.2009 (A.A. Nadolny). Razdol'noe Distr.: 1 ♂ (TNU), 9 km



FIGURES 1–12. Habitus and copulatory organs of *Alopecosa kovblyuki* sp. nov. from Ukraine (2–5, 7–8—TNU 2819/1; 5, 9, 12—TNU 2814/1; 10—TNU SO70; 11—TNU SO49/2). 1—male in natural habitat (Crimea, Lebyazh'i Islands); 2—male pedipalp, ventral; 3—male pedipalp, prolatero-ventral; 4—bulbus, retrolateral; 5–6—tegular (=median) apophysis, ventral (variation); 7—embolic division, ventral; 8—embolic division, prolatero-caudal; 9–11—epigyne, ventral (variation); 12—epigyne, dorsal. Abbreviations: AEP—anterior epigynal pocket; E—embolus; ED—embolic division; S—epigynal septum; Se—synembolus; TgA—tegular (=median) apophysis. Arrow indicates projection of tegulum. Scale bar: 0.1 mm.

N Razdol'noe, environs of Portovoe Village, Lebyazh'i Islands branch of Crimean State Nature Reserve, 45°51'17"N 33°29'40"E, 19.04.2012 (A.A. Nadolny). **Kherson area**, Genichesk Distr.: 5 ♂♂ 5 ♀♀ (TNU-2804/3, 2812/2, 2814/1, 2819/1, 2887/9, 2894/2, 2903/4), environs of Genichesk, 46°10'N 34°48'E, Arabatskaya Strelka, hand collected and pitfall traps, 31.05–26.11.2010 (N.A. Stasyuk). **Mykolaiv area**, Pervomaysk Distr.: 3 ♀♀ (TNU), Myhiya Village, 48°02'N 30°57'E, dry meadow, 7.05–8.06.2007 (N.Yu. Polchaninova). **Poltava area**, Novosanzharskiy Distr.: 2 ♂♂ 3 ♀♀ (TNU), Sokolova Balka Village, 49°12'N 34°37'E, southern slope with ruderal vegetation, 27.04–14.06.2011 (I.P. Lezhenina).

Comparative material. *Alopecosa beckeri* (Thorell, 1875): UKRAINE. **Crimea:** see material in Nadolny & Kovblyuk (2010). *Alopecosa taeniopus* (Kulczynski, 1895): RUSSIA. **Astrachan' area:** 7 ♀♀ (CP), 230 km NW Astrachan', Bogdinsko-Baskunchakskiy Reserve, 13–17.07.2002, 7–10.06.2005 (E.A. Belosludtsev & A.S. Tilli). **Belgorod area:** 2 ♂♂ (CP), Kustovoe Village, 17.10.1998 (A.V. Ponomarev). **Rostov area:** 1 ♂ (CP-25.11.5/34), Razdorskaya Village, Pukhlyakovskie Sklony, 23.03.2004 (A.V. Ponomarev); 4 ♂♂ 1 ♀ (CP), Don River delta, 12 km N Azov, 9–16.04.2008 (P.P. Ivliev). UKRAINE. **Crimea:** see material in Nadolny & Kovblyuk (2010).

Etymology. The species name is a patronym in honour of our friend and colleague, Mykola M. Kovblyuk (Simferopol, Ukraine).

Diagnosis. The new species is similar to *A. beckeri*, *A. mariae* (Dahl, 1908) and *A. taeniopus*. Males can be distinguished from these species by a rounded projection on the tegulum (Figs 2–3, 13). In addition, the shape of tegular (=median) apophysis (Figs 2–6, 13–14) and synembolus (Figs 7–8) is also distinct. Females of the new species and *A. mariae* clearly differ from *A. beckeri* (Nadolny & Kovblyuk 2010: figs 23, 27) and *A. taeniopus* (Nadolny & Kovblyuk 2010: figs 25, 29) by the presence of two anterior epigynal pockets (Figs 9–11; Buchar & Thaler, 2004: figs 5–6). Females of *A. kovblyuki* **sp. nov.** and *A. mariae* differ in the shape of the epigynal septum and the spermathecal reservoirs. The epigynal septum of *A. kovblyuki* **sp. nov.** is highly variable (Figs 9–11), therefore females of the new species and *A. mariae* are difficult to distinguish.

Description. Holotype: total length 9.0; carapace 4.4 long, 3.2 wide. Median light brown band on carapace widening in anterior part, and reaches the border of the carapace at the level of posterior lateral eyes. Dark brown areas on each side of median band. Carapace with broad white marginal bands. Eye area black. Chelicerae dark brown. Cheliceral claw with hillock on proximal part. Sternum light brown, covered with black setae. Legs and pedipalps light brown. Pedipalpal tibia more than twice as long as wide. Median band with grey lanceolate spot; series of spots on the dorsal abdomen; median band bordered with brown band. Sides of abdomen yellow. Ventral abdomen with grey spot. Tibiae spination: I, II – pl 1-1, rl 1-1, v 2-2-2(a); III, IV – d 1-1, pl 1-1, rl 1-1, v 2-2-2(a). Paratypes (TNU-2814/1), measurements (male/female): total length 8.0 / 9.4; carapace 3.8 / 4.2 long, 2.7 / 2.9 wide. Length of pedipalp segments (male/female): femur 1.4 / 1.4, patella 0.8 / 0.8, tibia 0.7 / 0.7, tarsus 1.3 / 1.2.

Length of leg segments (male/female):

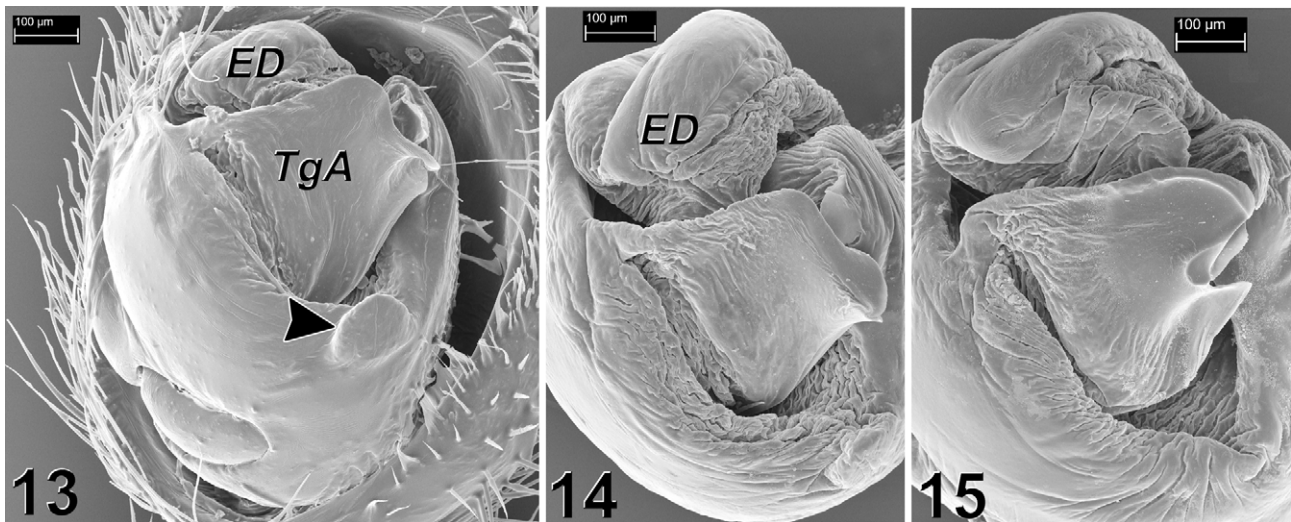
Leg	Femur	Patella	Tibia	Metatarsus	Tarsus
I	2.6 / 2.8	1.4 / 1.5	2.0 / 2.0	2.0 / 2.0	1.6 / 1.4
II	2.5 / 2.7	1.3 / 1.4	1.8 / 1.8	2.0 / 2.0	1.5 / 1.4
III	2.4 / 2.5	1.2 / 1.2	1.6 / 1.6	2.1 / 2.2	1.3 / 1.3
IV	3.1 / 3.4	1.3 / 1.5	2.3 / 2.5	3.3 / 3.5	1.8 / 1.7

Male pedipalp: tegulum with rounded projection on ventral side, retrolateral side of tegular apophysis curved ventrally, embolus flat and wide, synembolus claw-like, distal part of embolus and synembolus hidden behind tegular apophysis (Figs 2–8, 13–14); epigyne with two anterior pockets, septum flat, width of septum more than 1.5 times length, spermatheca spherical (Figs 9–12).

Variation. Males (n = 11): carapace 3.6–4.4 long and 2.6–3.2 wide. Tegular apophysis shape variable (Figs 5–6). Females (n = 10): carapace 4.1–4.6 long, 2.9–3.2 wide. Epigyne shape variable (Figs 9–11). The grey spot on the ventral side of abdomen can be absent.

Phenology. Males and females have been found from March to November, with peak activity in April. Females with egg sacs were found in May. *Alopecosa kovblyuki* **sp. nov.** and *A. taeniopus* occur sympatrically and have a similar phenology (Fig. 16).

Habitats. Most of specimens were collected in grasslands (steppe; meadows with *Artemisia* & *Limonium*; meadows with *Phragmites* & *Carex*; *Salicornia* & *Halocnemum* on the silt). A few specimens were collected in plantations of various deciduous trees.



FIGURES 13–15. Male copulatory organs of *Alopecosa kovblyuki* **sp. nov.** and *A. taeniopus* from Russia (13—ZMMU; 14—CP 25.11.29/1) and *A. taeniopus* (15—CP 25.11.5/34) from Russia. 13—bulbus, ventral; 14–15—bulbus, ventral (a little on front). Abbreviations: ED—embolic division; TgA—tegular (=median) apophysis. Arrow indicates projection of tegulum. Scale bar: 0.1 mm.

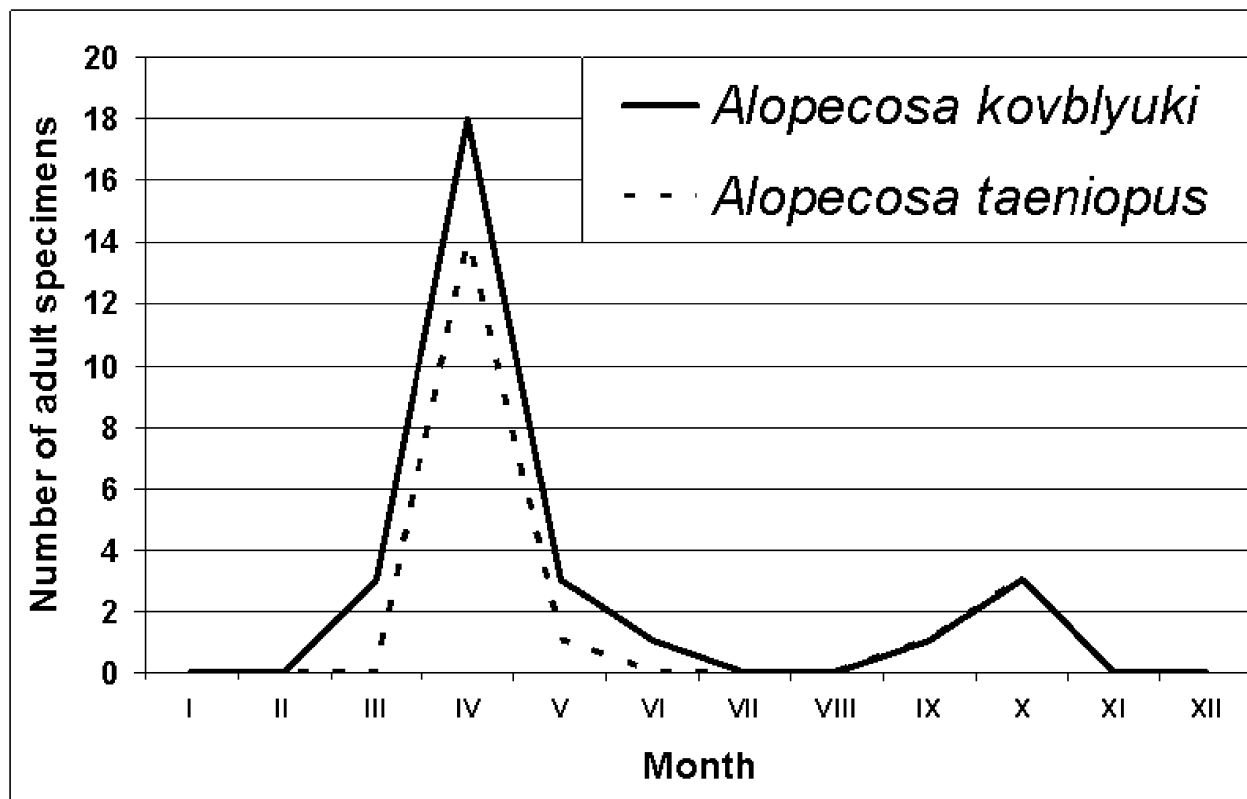


FIGURE 16. Comparative phenology of *Alopecosa kovblyuki* **sp. nov.** and *A. taeniopus* based on specimens collected by pitfall traps in the environs of Solenoe Ozero Village, Crimea during 2009.

Distribution. Ukraine (Mykolaiv area, Crimea, Kherson area, Poltava area), Russia (Rostov area). Collection records of *A. kovblyuki* **sp. nov.** are shown on Fig. 17.

Remarks. *Alopecosa kovblyuki* **sp. nov.** has similarities with other *Alopecosa* species. However, the structure of the pedipalp and epigyne differs from the type species of the genus, *A. fabrilis*. The correct placement of *A. kovblyuki* **sp. nov.** can only be resolved when *Alopecosa* is revised.



FIGURE 17. Localities of *Alopecosa kovblyuki* sp. nov. (squares) in Ukraine and Russia.

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