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The First Record of *Sceliphron deformе* (F. Smith, 1856) (Hymenoptera: Sphecidae) in Belgorod Region, Russia

Yuri A. Prisniy

Belgorod National Research University,
85 Pobedy St, Belgorod 308015, Russia
E-mail: prisniy_y@bsu.edu.ru

Abstract. The first reliable detection in Belgorod region of *Sceliphron deformе* (F. Smith, 1856), an Asian species of sphecids, expanding its area on territory of European Russia, is reported. Females of *S. deformе* were caught in cottages on outskirts of Belgorod town and in TavoIzhanka village (Novooskolskiy District, Belgorod Region) in July 2021. The registration of the species in Belgorod region is currently the most western in European part of Russia.

Keywords: Eastern Europe, European part of Russia, Central Russian Upland, expansion of area, Asian species, new records.

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Первая находка *Sceliphron deformе* (F. Smith, 1856) (Hymenoptera: Sphecidae) на территории Белгородской области (Россия)

Ю.А. Присный

Белгородский государственный национальный исследовательский университет,
Россия, 308015, г. Белгород, ул. Победы, 85
E-mail: prisniy_y@bsu.edu.ru

Аннотация. Сообщается о первом достоверном обнаружении на территории Белгородской области *Sceliphron deformе* (F. Smith, 1856) – азиатского вида сфецид, расширяющего свой ареал на территории европейской России. Самки *S. deformе* были пойманы в жилых помещениях в г. Белгороде и в с. Таволжанка Новооскольского района в июле 2021 года. Регистрация вида в Белгородской области является на данный момент наиболее западной в европейской части России.

Ключевые слова: Восточная Европа, Европейская часть России, Среднерусская возвышенность, расширение ареала, азиатские виды, новые находки.

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Introduction

Currently, mud-dauber wasps of the genus *Sceliphron* Klug, 1801 in European Russia are represented by 6 species: *S. destillatorium* (Illiger, 1807), *S. madraspatanum* (Fabricius, 1871), *S. spirifex* (Linnaeus, 1758), *S. caementarium* (Drury, 1773), *S. curvatum* (F. Smith, 1870) and *S. deforme* (F. Smith, 1856) [Danilov, 2017]. Among them are two invasive species: *S. caementarium* is an American species found in Crimea [Shorenko, 2020], and *S. curvatum* is an Asian species recorded in Crimea, Krasnodar Territory, and Astrakhan Region [Danilov, Mokrousov, 2017]; it was recently recorded in Belgorod Region [Prisniy, Cherkasova, 2021]. *S. deforme* is an Asian species also, but its range is expanding to the west.

The original range of *S. deforme* was located in East and South Asia, reaching in the west to East Kazakhstan; in Russia, this species was distributed in the Far East and West Siberia [Kazenas, 1978; Hensen, 1987]. About twenty years ago, this species began to be registered in European Russia. In the early 2000s *S. deforme* was noted in Nizhny Novgorod Region [Mokrousov, 2000], then in Republics of Mordovia [Mokrousov et al., 2013] and Chuvashia [Mokrousov, 2015], and in Ulyanovsk [Yudin, 2016], Penza [Polumordvinov, 2017], Orenburg, Voronezh and Krasnodar Regions [Danilov, Mokrousov, 2017] and in the Republic of Bashkiria [Antropov et al., 2019]. As can be seen, the ways of expanding *S. deforme* range at this stage are difficult to trace, since its registration in European Russia has a “spotty” character. Therefore, new locations for this species are important in understanding its distribution.

Our previous message about invasive species *S. curvatum* [Prisniy, Cherkasova, 2021] supplemented the list of digger wasps in Belgorod Region given by A.V. Prisniy [2012]. Now we present data on another species, *Sceliphron deforme* (F. Smith, 1856), which was first recorded in Belgorod region.

Results

EXAMINED MATERIAL: 1♀, July 2, 2021, Belgorod, cottage (50.600000 N, 36.500000 E) (Fig. 1, 2); 3♀, July 29, 2021, Tavolzhanka village (Novooskolskiy District, Belgorod Region), cottage (50.681266 N, 37.785054 E).

The species were determined using taxonomic keys [Hensen, 1987; Schmid-Egger, 2005]. The main characters distinguishing *S. deforme* from *S. curvatum* are: more curved petiole, first abdominal tergite swollen, and shape of spot on clypeus. The collected specimen was identified as *S. deforme* (see Fig. 1, 2).

As well as *S. curvatum*, which we recorded earlier [Prisniy, Cherkasova, 2021], the species *S. deforme* belongs to subgenus *Hensenia* Pagliano et Scaramozzino, 1990. A characteristic feature of these species is the construction of nests consisting of groups of single cells not covered with a general layer of mud. *S. destillatorium* is typical species for Belgorod Region, it belongs to subgenus *Sceliphron* s.str. This species builds nests from cells covered with a general clay layer.

Since both *S. curvatum* and *S. deforme* are mainly subtropical species, on the territory of European Russia these species are most often confined to human buildings, where there are suitable conditions for its development.

In addition to adults in Belgorod, near the same house where the female *S. deforme* was caught, on August 12, 2021, a nest consisting of eight separate earthen and clay cells was found among silicate blocks located on well-illuminated southern side (Fig. 3). Among eight cells founded six were empty (with remains of cocoons) and two contained prepupae. On 20th of August, a female was seen penetrating a ventilation hole in window frame in the same house.

To date, the registration of *S. deforme* in Belgorod Region is the most western in European Russia.



Fig. 1. General view of a specimen of *Sceliphron deformе* (Smith, 1856) caught in Belgorod (Russia):

A – top view; B – side view

Рис. 1. Общий вид экземпляра *Sceliphron deformе* (Smith, 1856), пойманного в г. Белгород:
А – вид сверху; Б – вид сбоку



Fig. 2. Clypeus spot of a female *Sceliphron deformе* (Smith, 1856) caught in TavoIzhanka village (Novooskolskiy District, Belgorod Region)
Рис. 2. Рисунок на наличнике самки *Sceliphron deformе* (Smith, 1856), отмеченной в с. Таволжанка Новооскольского района Белгородской области



Fig. 3. Nest cells of *Sceliphron deformе* (Smith, 1856) found on 08.12.2021 between building blocks in Belgorod (earth and clay cells on the far right are sealed and contain prepupae)
Рис. 3. Ячейки гнезда *Sceliphron deformе* (Smith, 1856), найденные 12.08.2021 между строительными блоками в г. Белгороде (крайние справа земляная и глиняная ячейки запечатаны – с предкуколками)

References

- Antropov A.V., Valuev V.A., Muldashev A.A. 2019. Pelopey bezobraznyy *Sceliphron deforme* (F. Smith, 1856) v Bashkirii [*Sceliphron deforme* (F. Smith, 1856) in Bashkiria]. *Redkiye i ischezayushchiye vidy zhivotnykh i rasteniy Respubliki Bashkortostan*, 25: 3–12.
- Kazenas V.L. 1978. Royushchiye osy Sredney Azii i Kazakhstana (Hymenoptera, Sphecidae) [Burrowing wasps of Central Asia and Kazakhstan (Hymenoptera, Sphecidae)]. Alma-Ata, "Nauka" Kazakh SSR, 172 p.
- Mokrousov M.V. 2015. Changes and additions to the fauna of digger wasps (Hymenoptera: Sphecidae, Crabronidae) of the Middle Volga and adjacent territories. *Proceedings of the Russian Entomological Society*, 86 (2): 76–84 (in Russian).
- Mokrousov M.V., Ruchin A.B., Egorov L.V. 2013. Materialy po faune osy (Hymenoptera, Vespomorpha) Mordovskogo gosudarstvennogo prirodnogo zapovednika i prilegayushchikh territoriy [Materials on the fauna of wasps (Hymenoptera, Vespomorpha) of the Mordovian State Nature Reserve and adjacent territories]. *Proceedings of the Mordovia State Nature Reserve*, 11: 193–205.
- Polumordvinov O.A. 2017. The First Records in the Fauna of Penza Province – *Sceliphron deforme* (Hymenoptera: Sphecidae). *Entomological and Parasitological Investigations in Volga Region*, 17: 25–30 (in Russian).
- Prisniy A.V. 2012. Digger wasps (Hymenoptera: Sphecidae, Crabronidae) of the Belgorodskaya oblast. *Euroasian Entomological Journal*, 11 (1): 44–54 (in Russian).
- Shorenko K.I. 2020. Invaziya vidov triby Sceliphronini (Hymenoptera, Sphecidae) v entomofaunu Kryma: veroyatnyye puti migratsiy i retrospektivnaya otsenka posledstviy [Invasion of species of tribe Sceliphronini (Hymenoptera, Sphecidae) into Crimean entomofauna: probable migration routes and retrospective assessment of consequences]. In: Nauka, priroda i obshchestvo [Science, nature and society]. Materials of the All-Russian Scientific Conference dedicated to the 100th anniversary of the Ilmsky State Reserve, the 100th anniversary of the birth of Academician P.L. Gorchakovskiy and the 70th birthday of the mineralogist V.O. Polyakov. Miass, South Ural Federal Research Center for Mineralogy and Geoecology of the Ural Branch of the Russian Academy of Sciences: 170–173.
- Yudin A.N. 2016. Novyye dannyye o rasprostraneni os-pelopeyev *Sceliphron* Latreille, 1802 v Povolzh'ye (Hymenoptera: Sphecidae) [New data on the distribution of wasps *Sceliphron* Latreille, 1802 in the Volga region (Hymenoptera: Sphecidae)]. In: Priroda Simbirskogo Povolzh'ya [The Nature of the Simbirsk Volga Region]. Collection of scientific papers of the XVIII Interregional Scientific and Practical Conference "Natural Science Research in the Simbirsk-Ulyanovsk Territory" (Ulyanovsk, December 5–6, 2016). Ulyanovsk: 160–165.
- Danilov Yu.N. 2017. Family Sphecidae – Sphecid Digger Wasps. In: Annotated catalogue of the Hymenoptera of Russia. Volume 2. Apocrita: Parasitica. Saint-Petersburg: 212–216. (Proceedings of the Zoological Institute RAS, Spl. No. 8).
- Danilov Yu.N., Mokrousov M.V. 2017. New data on the distribution and taxonomy of some palaeartic species of Sphecidae (Hymenoptera: Apoidea). *Euroasian Entomological Journal*, 16 (2): 107–113.
- Hensen R.V. 1987. Revision of the subgenus *Prosceliphron* van der Vecht (Hymenoptera, Sphecidae). *Tijdschrift Voor Entomologie*, 129: 217–261.
- Prisniy Yu.A., Cherkasova T.S. 2021. The First Record of *Sceliphron curvatum* (Smith, 1870) (Hymenoptera: Sphecidae) in Belgorod Region, Russia. *Field Biologist Journal*, 3 (2): 159–166. DOI: 10.52575/2658-3453-2021-3-2-159-166
- Schmid-Egger Ch. 2005. *Sceliphron curvatum* (F. Smith 1870) in Europa mit einem Bestimmungsschlüssel für die europäischen und mediterranen Sceliphron-Arten (Hymenoptera, Sphecidae) [*Sceliphron curvatum* (F. Smith 1870) in Europe with an identification key for the European and Mediterranean Sceliphron species (Hymenoptera, Sphecidae)]. *BembiX*, 19: 7–28 (in German).

Список литературы

- Антропов А.В., Валуев В.А., Мулдашев А.А. 2019. Пелопей безобразный *Sceliphron deforme* (F. Smith, 1856) в Башкирии. *Редкие и исчезающие виды животных и растений Республики Башкортостан*, 25: 3–12.
- Казенас В.Л. 1978. Роющие осы Средней Азии и Казахстана (Hymenoptera, Sphecidae). Алма-Ата, «Наука» КазССР, 172 с.

- Мокроусов М.В. 2015. Изменения и дополнения к фауне роющих ос (Hymenoptera: Sphecidae, Crabronidae) Среднего Поволжья и сопредельных территорий. *Труды Русского энтомологического общества*, 86 (2): 76–84.
- Мокроусов М.В., Ручин А.Б., Егоров Л.В. 2013. Материалы по фауне ос (Hymenoptera, Vespomorpha) Мордовского государственного природного заповедника и прилегающих территорий. *Труды Мордовского государственного заповедника имени П.Г. Смидовича*, 11: 193–205.
- Полумордвинов О.А. 2017. Первые находки *Sceliphron deforme* (Hymenoptera: Sphecidae) на территории Пензенской области. *Энтомологические и паразитологические исследования в Поволжье*, 17: 25–30.
- Присный А.В. 2012. Роющие осы (Hymenoptera: Sphecidae, Crabronidae) Белгородской области. *Евразийский энтомологический журнал*, 11 (1): 44–54.
- Шоренко К.И. 2020. Инвазия видов трибы Sceliphronini (Hymenoptera, Sphecidae) в энтомофауну Крыма: вероятные пути миграций и ретроспективная оценка последствий. В кн.: Наука, природа и общество. Материалы всероссийской научной конференции, посвященной 100-летию Ильменского государственного заповедника, 100-летию со дня рождения академика П.Л. Горчаковского и 70-летию со дня рождения минералог В.О. Полякова. Миасс, ЮУ ФНИЦ МиГ УрО РАН: 170–173.
- Юдин А.Н. 2016. Новые данные о распространении ос-пелопеев *Sceliphron* Latreille, 1802 в Поволжье (Hymenoptera: Sphecidae). В кн.: Природа Симбирского Поволжья. Сборник научных трудов XVIII межрегиональной научно-практической конференции «Естественнонаучные исследования в Симбирском–Ульяновском крае» (г. Ульяновск, 5–6 декабря 2016 года). Ульяновск: 160–165.
- Danilov Yu.N. 2017. Family Sphecidae – Sphecid Digger Wasps. In: Annotated catalogue of the Hymenoptera of Russia. Vol. 2. Apocrita: Parasitica. Saint-Petersburg: 212–216. (Proceedings of the Zoological Institute RAS, Spl. No. 8).
- Danilov Yu.N., Mokrousov M.V. 2017. New data on the distribution and taxonomy of some palaeartic species of Sphecidae (Hymenoptera: Apoidea). *Euroasian Entomological Journal*, 16 (2): 107–113.
- Hensen R.V. 1987. Revision of the subgenus *Prosceliphron* van der Vecht (Hymenoptera, Sphecidae). *Tijdschrift Voor Entomologie*, 129: 217–261.
- Prisniy Yu.A., Cherkasova T.S. 2021. The First Record of *Sceliphron curvatum* (Smith, 1870) (Hymenoptera: Sphecidae) in Belgorod Region, Russia. *Field Biologist Journal*, 3 (2): 159–166. DOI: 10.52575/2658-3453-2021-3-2-159-166
- Schmid-Egger Ch. 2005. *Sceliphron curvatum* (F. Smith 1870) in Europa mit einem Bestimmungsschlüssel für die europäischen und mediterranen Sceliphron-Arten (Hymenoptera, Sphecidae) [*Sceliphron curvatum* (F. Smith 1870) in Europe with an identification key for the European and Mediterranean Sceliphron species (Hymenoptera, Sphecidae)]. *BembiX*, 19: 7–28 (in German).

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ИНФОРМАЦИЯ ОБ АВТОРЕ

Присный Юрий Александрович, кандидат биологических наук, доцент, доцент кафедры биологии Белгородского государственного национального исследовательского университета, г. Белгород, Россия

INFORMATION ABOUT THE AUTHOR

Yuri A. Prisniy, Candidate of Biological Sciences, Associate Professor, Associate Professor of Department of Biology of Belgorod National Research University, Belgorod, Russia