

RESEARCH ARTICLE

UDC 595.794

The fauna and ecology of wasps of the genus *Tachysphex* Kohl, 1883 (Hymenoptera: Apoidea: Crabronidae) in Nakhchivan Autonomous Republic of Azerbaijan

M.M. Maharramov¹, Kh.A. Aliyev², A.B. Bayramov¹

¹Institute of Bioresources of Nakhchivan Branch of National Academy of Sciences of Azerbaijan, Babak 10, Nakhchivan AZ 7000 Azerbaijan. E-mail: mahir_maherramov@mail.ru

²Institute of Zoology of National Academy of Sciences of Azerbaijan, passage 1128, district 504, Baku AZ 1073 Azerbaijan. E-mail: khalidaliev@mail.ru

An annotated checklist containing 11 species in five species groups of the wasp genus *Tachysphex* that occur in the Nakhchivan Autonomous Republic is presented. Five species are recorded from Azerbaijan for the first time: *Tachysphex ferrugineus* Pulawski, 1967, *T. nitidus* (Spinola, 1806), *T. pompiliformis* (Panzer, 1803), *T. mocsaryi* Kohl, 1884 and *T. costae* (de Stefani Perez, 1882). Six species are recorded from Nakhchivan AR for the first time: *Tachysphex consocius* Kohl, 1892, *T. fulvitaris* (A. Costa, 1867), *T. helveticus* Kohl, 1885, *T. brevipennis* Mercet, 1909, *T. pulcher* Pulawski, 1967, *T. dignus* Kohl, 1889. Data on landscape and habitat distributions of each species are given.

Key words: Crabronidae, *Tachysphex*, fauna, habitat, landscape, Nakhchivan.

Introduction

The Crabronidae is a large wasp family that presently contains 8773 described species from 242 genera and occurring on all continents excluding Antarctica (Aguiar et al., 2013). The family is divided into 8 subfamilies while the genus *Tachysphex* Kohl, 1883 represents the subfamily Crabroninae and comprises 448 species described from all over the world (Pulawski, 2018).

The first information concerning the presence of the genus *Tachysphex* in Azerbaijan is contained in Kohl (1892), who described a new species. Further faunistic data appeared only much later (Pulawski, 1967, 1971; Krombein & Pulawski, 1994; Straka, 2005; Atbaei et al., 2015; Yıldırım et al., 2016), but the *Tachysphex* fauna of Nakhchivan AR still remains very poorly known.

The present paper summarizes our knowledge of the genus in the republic, based both on original and literature records. Altogether, 11 species are concerned, representing five species groups. Data on the ecology and bionomics of five species recorded in Azerbaijan, of six species recorded in Nakhchivan AR for the first time are also given.

Material and methods

The material taken by the first author in 2003–2017 in various places in Nakhchivan AR serves as the basis for the present contribution, coupled with the collections housed in the Institute of Zoology, National Academy of Sciences Azerbaijan, Baku (IZA).

The study material reported below comes from all over the territory of Nakhchivan AR, mostly using a Malaise trap and several entomological nets set in montane or steppe landscapes. Altogether, over 40 specimens of *Tachysphex* were captured and examined. In order to establish or verify the species identities, the material was compared to specimens, including types, coming from various places within the Palearctic.

The taxonomy of *Tachysphex* is presented below following Bohart & Menke, (1976), Pulawski (2018). Therefore, full information about synonymies is only given as regards the fauna of Azerbaijan. General distributions follow Pulawski (1971), Krombein & Pulawski (1994), Kazenas (2002) and Nemkov (2009).

The species newly reported from Azerbaijan are marked with one asterisk (*). The species newly reported from Nakhchivan AR are marked with two asterisks (**).

Results and discussion

Family Crabronidae Latreille, 1802

Subfamily Crabroninae Latreille, 1802

Tribe Larrini Latreille, 1810

Genus Tachysphex Kohl, 1883

The *Tachysphex pompiliformis* group

*****Tachysphex consocius* Kohl, 1892**

Tachysphex consocius Kohl, 1892: 217 (type locality: Helenendorf [=Goygol] Azerbaijan); Pulawski, 1971: 189; Atbaei et al., 2015: 25; Yıldırım et al., 2016: 33.

Material examined: Nakhchivan AR, Shakhbuz, 11.VI.2013, 1 ♀, 2 ♂♂ (M. Maharramov) [IZA].

General distribution: Europe, except Northern, North Africa, Southwest and Central Asia, Iran, Afghanistan, Mongolia, India, Sri Lanka.

Remarks: This species inhabits low mountainous steppe and forested landscapes. In the mountains, it reaches up to 1400 m a.s.l.

****Tachysphex ferrugineus* Pulawski, 1967**

Tachysphex ferrugineus Pulawski, 1967: 401 (type locality: Trabzon, Turkey).

Material examined: Shakhbuz, Kechili, 25.VI.2012, 2 ♂♂ (M. Maharramov) [IZA].

General distribution: Turkey, European part of Russia (Krasnodarskiy kray), Georgia, *Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan.

Remarks: This species inhabits coastal zones with sand and mid-montane steppe landscapes. In the mountains, it reaches up to 1800 m a.s.l.

*****Tachysphex fulvitaris* (A. Costa, 1867)**

Tachytes fulvitaris A. Costa, 1867: 86 (type locality: Campania, Italy); Pulawski, 1971: 95.

Material examined: Nakhchivan AR, Ordubad, 11.VII.2012, 2 ♂♂ (Kh. Aliyev) [IZA]; Nakhchivan AR, Ordubad, Kotam, 29.VI.2016, 1 ♀ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Nahajir, 13.VI.2017, 2 ♀♀ (M. Maharramov) [IZA].

General distribution: Europe, except Northern, North Africa (Algeria), Southwest and Central Asia, Russia (Yakutsk).

Remarks: This species has been captured in low mountainous steppe and low montane forested landscapes.

*****Tachysphex helveticus* Kohl, 1885**

Tachysphex helveticus Kohl, 1885: 374 (type locality: Suisse, Switzerland); Pulawski, 1971: 176.

Material examined: Nakhchivan AR, Babek, Nahajir, 25.V.2016, 2 ♀♀, 1 ♂ (M. Maharramov) [IZA].

General distribution: Europe, except the Far North, European part of Russia, Turkey, Azerbaijan, Kazakhstan, Uzbekistan, Tajikistan, Mongolia.

Remarks: This species occurs in low mountainous forested steppe landscapes.

****Tachysphex nitidus* (Spinola, 1806)**

Astata nitida Spinola, 1806: 18 (type locality: Liguria, Italy).

Material examined: Nakhchivan AR, Sharur, 10.V.2003, 1 ♀, 1 ♂ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Dize, 13.VI.2017, 2 ♂♂ (M. Maharramov) [IZA].

General distribution: Europe, except Northern, North Africa, *Azerbaijan, Southwest and Central Asia, Kazakhstan, Mongolia, China.

Remarks: This species occurs in low mountainous steppe landscapes.

****Tachysphex pompiliformis* (Panzer, 1803)**

Larra pompiliformis Panzer, 1803: 13 (type locality: Germany).

Material examined: Nakhchivan AR, Nakhchivan, 10.VI.2010, 1 ♀, 1 ♂ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Sirab, 7.VI.2016, 2 ♀♀, 1 ♂ (M. Maharramov) [IZA].

General distribution: Holarctic region.

Remarks: This species occurs in low mountainous forested and steppe landscapes in open places. In the mountains, it reaches up to 1200 m a.s.l.

The *Tachysphex brevipennis* group

*****Tachysphex brevipennis* Mercet, 1909**

Tachysphex brevipennis Mercet, 1909: 197 (type locality: El Escorial, Spain); Pulawski, 1971: 245 (as *Tachysphex rugosus*).

Material examined: Nakhchivan AR, Babek, Sirab, 1.VI.2016, 2 ♂♂ (Kh. Aliyev) [IZA].

General distribution: Hungary, Bulgaria, Romania, Macedonia, Greece, Turkey, Syria, Israel, Azerbaijan, Russia (Crimea), Uzbekistan, Turkmenistan, Tajikistan.

Remarks: This species occurs in lowland semi-desert landscapes in sandy habitats.

The *Tachysphex panzeri* group

**Tachysphex mocsaryi* Kohl, 1884

Tachysphex mocsaryi Kohl, 1884: 367 (type locality: Hungary)

Material examined: Nakhchivan AR, Sharur, Akhura, 15.V.2012, 1 ♂ (M. Maharramov) [IZA]; Shakhbuz, Kechili, 25.VI.2012, 1 ♀, 1 ♂ (M. Maharramov) [IZA].

General distribution: Hungary, Bulgaria, Romania, Spain, Libya, *Azerbaijan, southern Russia, Southwest and Central Asia.

Remarks: This species occurs in middle mountainous steppe landscapes up to 1800 m a.s.l.

***Tachysphex pulcher* Pulawski, 1967

Tachysphex pulcher Pulawski, 1967: 394 (type locality: Akhcha-Kuyma near Nebit-Dag, Turkmenistan); Pulawski, 1971: 282.

Material examined: Nakhchivan AR, Ordubad, Bilav, 16.V.2013, 1 ♀, 1 ♂ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Sirab, 7.VI.2016, 2 ♀♀ (M. Maharramov) [IZA].

General distribution: Southwest and Central Asia.

Remarks: This species occurs in lowland semi-desert and middle mountainous steppe landscapes on dry slopes. In the mountains, it reaches up to 1600 m a.s.l.

The *Tachysphex julliani* group

***Tachysphex dignus* Kohl, 1889

Tachysphex dignus Kohl in Kohl & Handlirsch, 1889: 278 (type locality: Nukhur in Kopet-Dagh, Turkmenistan); Pulawski, 1971: 360.

Material examined: Nakhchivan AR, Ordubad, Dasta, 2.V.2009, 1 ♂ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Nehram, 10.V.2009, 1 ♀, 1 ♂ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Nahajir, 25.V.2016, 1 ♀ (M. Maharramov) [IZA].

General distribution: Turkey, Cyprus, Syria, Israel, Azerbaijan, Iran, Turkmenistan, Tajikistan.

Remarks: This species occurs in low mountainous semi-desert landscapes.

The *Tachysphex erythropus* group

**Tachysphex costae* (de Stefani Perez, 1882)

Tachytes costae de Stefani Perez, 1882: 42 (type locality: Sicily, Italy).

Material examined: Nakhchivan AR, Sirab, 12.V.2008, 1 ♀, 1 ♂ (M. Maharramov) [IZA]; Nakhchivan AR, Babek, Dize, 15.V.2016, 3 ♂♂ (M. Maharramov) [IZA].

General distribution: Southern Europe, Cyprus, North Africa, Israel, Turkey, *Azerbaijan, Iran, Central Asia.

Remarks: This species inhabits low mountainous semi-desert landscapes.

Conclusion

An annotated checklist containing 11 species in five species groups of the wasp genus *Tachysphex* that occur in the Nakhchivan Autonomous Republic is presented. Species *Tachysphex ferrugineus* Pulawski, 1967, *T. nitidus* (Spinola, 1806), *T. pompiliformis* (Panzer, 1803), *T. mocsaryi* Kohl, 1884 and *T. costae* (de Stefani Perez, 1882) are specified for the first time for fauna of Azerbaijan, *Tachysphex consocius* Kohl, 1892, *T. fulvitaris* (A. Costa, 1867), *T. helveticus* Kohl, 1885, *T. brevipennis* Mercet, 1909, *T. pulcher* Pulawski, 1967, *T. dignus* Kohl, 1889 are specified for the first time for the fauna of Nakhchivan Autonomous Republic. Data on landscape and habitat distributions of each species are given.

References

Aguiar, A.P., Deans, A. R., Engel, M. S., Forshage, M., Huber, J. T., Jennings, J. T., Johnson, N. F., Lelej, A. S., Longino, J. T., Lohrman, V., Mikó, I., Ohl, M., Ramussen, C., A. Taeger & D. S. K. Yu. (2013). Order Hymenoptera. In: Zhang, Z.-Q. (Editor). Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013). *Zootaxa*, 3703, 1-82.

Atbaei M., Fallahzadeh, M., Ljubomirov, T. (2015). A contribution to the fauna of Crabronidae (Hymenoptera, Apoidea) in South-Western Iran. *Journal of Insect Biodiversity*, 3 (11), 1-30.

Bohart, R. M. & Menke, A. S. (1976). Sphecoid Wasps of the World. A generic revision. Berkeley, Los Angeles, London: University of California Press.

- Costa, A. (1867). Prospetto sistematico degli Imenotteri Italiani da servire di Prodrómo della Imenotterologia Italiana. *Annuario del Museo Zoologico della R. Università di Napoli*, 4, 59-100.
- De Stefani Perez, T. (1882). Osservazioni entomologiche fatte nel territorio de Sciacca e descrizione d'un nuovo *Tachytes*. *Il Naturalista Siciliano*, 1, 38-42.
- Kazenas, V. L. (2002). Digger wasps (Hymenoptera, Sphecidae) of Kazakhstan. *Tethys entomological research*, 4, 1-177 (in Russian).
- Kohl, F. F. (1884). Neue Hymenopteren in den Sammlungen des k. k. zool. Hof-Cabinetes zu Wien. II. *Verhandlungen der kaiserlich-königlichen Zoologisch-Botanischen Gesellschaft in Wien*, 33, 331-386.
- Kohl, F. F. (1885). Die Gattungen und Arten der Larriden Autorum [sic]. *Verhandlungen der kaiserlich-königlichen Zoologisch-Botanischen Gesellschaft in Wien*, 34, 171-268.
- Kohl, F. F. (1892). Neue Hymenopterenformen. *Annalen des k.k. Naturhistorischen Hofmuseums*, 7, 197-234.
- Kohl, F. F., Handlirsch, A. (1889). Transcaspische Hymenopteren. *Verhandlungen der kaiserlich-königlichen Zoologisch-Botanischen Gesellschaft in Wien*, 39, 267-286.
- Krombein, K. V. & Pulawski, W. J. (1994). Biosystematic studies of Ceylonese wasps, XX: a revision of *Tachysphex* Kohl, 1883, with notes on other Oriental species (Hymenoptera: Sphecidae: Larrinae). *Smithsonian Contributions to Zoology*, 552, 1-106.
- Mercet, R. G. (1909). Especies nuevas de «*Tachysphex*». *Boletín de la Real Sociedad Española de Historia Natural*, 9, 194-199.
- Nemkov, P. G. (2009). Annotated catalogue of digger wasps (Hymenoptera: Sphecidae, Crabronidae) of Asian part of Russia. Vladivostok: Dalnauka (in Russian).
- Panzer, G. W. F. (1803). Faunae Insectorum Germanicae initia oder Deutschlands Insecten. Felseckersche Buchhandlung. Nürnberg, neun und achtzigsten Hefts, 1-24 & plates 1-24.
- Pulawski, W. J. (1967). Hymenoptera from Turkey. Sphecidae, II (Genera *Astata* Latreille and *Tachysphex* Kohl). *Bulletin of the British Museum (Natural History). Entomology*, 19, 383-410.
- Pulawski, W. J. (1971). Les *Tachysphex* (Hym., Sphecidae) de la region palearctique occidentale et centrale. Panstwowe Wydawnictwo Naukowe, Wrocław.
- Pulawski, W. J. (2018). Catalog of Sphecidae sensu lato (=Apoidea excluding Apidae). Available at <https://www.calacademy.org/scientists/projects/catalog-of-sphecidae> (Genera and Species: *Tachysphex*: Last updated: 3 June 2018).
- Spinola, M. (1806). Insectorum Liguria species novae aut rariores, quas in agro Ligustico nuper detexit, descripsit, et iconibus illustravit Maximilianus Spinola, iconibus illustravit Maximilianus Spinola, adjecto catalogo specierum auctoribus jam enumeratarum, quae in eadem regione passim occurrunt. Tom. I. us. Faciculum I um Sistit. Ives Gravier. Genuae: i-xvii & 1-159 & 1 unnumbered page & plates 1-2.
- Straka, J. (2005). A review of the genus *Tachysphex* (Hymenoptera: Apoidea) of Turkey, with description of four new species. *Acta Societatis Zoologicae Bohemicae*, 69, 247–276.
- Yıldırım, E., Ljubomirov, T., Özbek, H., Yüksel, M. (2016). New data on Spheciformes fauna (Hymenoptera: Ampulicidae, Sphecidae, Crabronidae) of Turkey. *Journal of Insect Biodiversity*, 4 (3), 1-51.

Citation:

Maharramov, M.M., Aliyev, Kh.A., Bayramov, A.B. (2018). The fauna and ecology of wasps of the genus *Tachysphex* Kohl, 1883 (Hymenoptera: Apoidea: *Crabronidae*) in Nakhchivan Autonomous Republic of Azerbaijan. *Acta Biologica Sibirica*, 4 (4), 53–56.

Submitted: 23.09.2018. **Accepted:** 05.11.2018

crossref <http://dx.doi.org/10.14258/abs.444875>



© 2018 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).