

Contribution on the study of *Eucera* Scopoli (Hymenoptera: Apidae) from Nakhchivan Autonomous Republic (Azerbaijan)

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Abstract

In Nakhchivan Autonomous Republic (Azerbaijan) the bee genus *Eucera* Scopoli, 1770 has been found to comprise 12 species, four of which are new to the Azerbaijan fauna: *E. caspica* Morawitz, 1873, *E. excisa* Mocsary, 1879, *E. nigrilabris* Lepeletier, 1841, and *E. seminuda* Brullé, 1832. Distributional and biological data are presented for all species.

Key words: *Eucera*, distribution, new records, feeding.

Zusammenfassung

Für die Autonome Republik Nachitschewan (Aserbaidshans) werden 12 Arten der Bienengattung *Eucera* Scopoli, 1770 nachgewiesen, darunter vier Arten neu für die Fauna Aserbaidshans: *E. caspica* Morawitz, 1873, *E. excisa* Mocsary, 1879, *E. nigrilabris* Lepeletier, 1841 und *E. seminuda* Brullé, 1832. Für alle Arten werden Daten zur Verbreitung und Biologie angegeben.

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1 Introduction

Nakhchivan Autonomous Republic is a landlocked exclave of Azerbaijan and situated in the south-western part of Transcaucasia. It is bordered by Armenia, Turkey and Iran. Natural borders are the northern Daralagez range, the eastern Zangezur range and the southern and south-western part of the Araz river. The lowest territory of the Republic, the Arazboyu plain (about 700 m above sea level), covers about one-third of the Republic, whereas the remaining two-thirds are located at altitudes between 1000 and 2000 m a. s. l. or higher.

The Arazboyu plain is about 150 km long and 25–30 km wide at its maximum width. It is characterised by cold and dry semi-desert climate. Minimum and maximum temperatures recorded in the plain are –32 °C and +43 °C respectively. The north-western, central and south-eastern parts of the Nakhichevan AR are situated in the mid mountain zone, which is very narrow in the North-West and wide in the centre of the Republic.

The low mountain zone (1200–1500 m) includes low mountains in the North-West and plains in the centre of the Republic. The mid mountain zone (1500–2400 m) covers the main part of the Republic and it is very wide between Shahbuz and Julfa districts. The narrow belt of the high mountain zone (2400–3906 m) covers the north-eastern, eastern and south-eastern parts of the Republic.

Nakhchivan AR is characterized by a rich flora. More than 2800 plant species are recorded here. The main ecosystems include semi-desert, mountains with xerophytic scrub, high mountain steppe, subalpine and alpine meadows.

The semi-desert zone covers the Arazboyu plain and foothills up to 1200 m spreading from North-West to South-East. The summer pastures of the zone are rich in wormwood (*Artemisia* sp.), camel thorn (*Alhagi* sp.), liquorice (*Glycyrrhiza glabra* L.) and ephemeral grasses.

The mountain zone with xerophytous scrub covers the territories situating at 1200–1500 m altitude.

The high mountain steppe is found from 2400 to 3900 m. Subalpine meadows are at the height of 2350–2900 m, and the alpine meadows are in humid territories at the height of 2900 m. Alpine meadows are well-developed in the Salvarti, Aghdaban, Kukudagh, Kecheldagh, Aghdagh and Gapichig mountains.

Only one species – *Eucera cineraria* Eversmann, 1852 has previously been recorded from Nakhchivan AR (SKHIRTADZE 1981).

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2 Material and methods

This report is based on a collection made by the senior author (K.H. A.) in May–June 1980 in the Ordubad district and in June 2003 in the Sharur district, and by the second author (M. M.) in June 2004–2007 in different parts of Nakhchivan AR. The samples were identified by K.H. A.

Identifications were made using the keys of OSYTSNJUK et al (1978) and SCHWARZ et al. (1996), and by comparison with identified material from the collection of IZB. General comments on the distribution of species are based on the works of ÖZBEK (1983), SKHIRTADZE (1981), SITDIKOV & PESENKO (1988), and PROSHALYKIN (2005). The subgeneric division of the genus follows TKALCŮ (1978, 1984) and SITDIKOV & PESENKO (1988).

The collected material is deposited at the Institute of Zoology of Azerbaijan National Academy of Sciences, Baku (IZB) and the Institute of Biological Resources of Nakhchivan branch of Azerbaijan National Academy of Sciences, Nakhchivan (IBRN).

3 List of the *Eucera* species from Nakhchivan AR

Subgenus *Pteneucera* Tkalců, 1984

Eucera (*Pteneucera*) *nigrifacies* Lepeletier, 1841

Material: Ordubad, Tivi, 29.VI.2007, 3 ♀♀ (M. M.).

Biology: Feeds on *Astragalus ammophilus* Kar. et Kir.

Distribution: West of Southern Europe, Caucasus.

Remarks: Occurs in the mid mountain xerophytous landscape on dry slopes and in gardens. In the mountains it reaches up to 1500 m. New record for Nakhchivan AR.

Subgenus *Eucera* Scopoli, 1770

Eucera (*Eucera*) *cineraria* Eversmann, 1852

Material: Sharur, Akhura, 2.VI.2003, 3 ♂♂, 4 ♀♀ (K.H. A.); Djulfa, Goynjuk, 1.VI.2006, 2 ♀♀ (M. M.).

Biology: Feeds on *Melilotus wolgicus* Poir. and *Medicago sativa* Ledeb.

Distribution: East of Southern Europe, Asia Minor, Transcaucasia.

Remarks: Occurs in the mid mountain xerophytous landscape. Inhabits meadows and bushland. In the mountains it reaches up to 1600 m.

Eucera (*Eucera*) *interrupta* Baer, 1850

Material: Ordubad, Bilav, 26.V.1980, 4 ♂♂, 8 ♀♀ (K.H. A.).

Biology: Feeds on *Rosa canina* L., *Cotoneaster melanocarpus* Fisch. ex Blytt, and *C. integerrimus* Medik.

Distribution: Southern and Middle Europe, Caucasus, Middle Asia.

Remarks: Occurs in the lower mountain semi-desert landscape in gardens. In the mountains it reaches up to 1200 m. New record for Nakhchivan AR.

Eucera (*Eucera*) *longicornis* Linnaeus, 1758

Material: Ordubad, 26.V.1980, 8 ♂♂ (K.H. A.); Shakhbuz, Batabat, 2.VI.2004, 3 ♂♂ (M. M.); same locality, 21.VI.2007, 1 ♂, 3 ♀♀ (M. M.).

Biology: Feeds on *Cerasus araxina* Pojark. and *Onobrychis cornuta* (L.) Desv.

Distribution: Europe (except for Far North), Transcaucasia.

Remarks: Occurs in the lower mountain semi-desert and mid mountain phryganoid landscape. Inhabits forest borders and slopes with xerophytous vegetation. In the mountains it reaches up to 1200 m. New record for Nakhchivan AR.

Eucera (*Eucera*) *nigrilabris* Lepeletier, 1841

Material: Ordubad, 25.V.1933, 1 ♂ (A. BOGACHEV); Ordubad, Nyusnyus, 2000 m, 26.V.1980, 4 ♂♂ (K.H. A.).

Biology: Feeds on *Taraxacum tenuisectum* Somm. et Levier.

Distribution: Southern Europe, Transcaucasia.

Remarks: Occurs in lower mountain semi-desert and mid mountain phryganoid landscape. Inhabits border fields, xerophytous slopes and gardens. In the mountains it reaches up to 1500 m. New record for Azerbaijan.

Eucera (*Eucera*) *nitidiventris* Mocsary, 1879

Material: Djulfa, Goynyuk, 1.VI.2006, 3 ♀♀ (M. M.).

Biology: Feeds on *Crataegus meyeri* Pojark. and *Achillea nobilis* L.

Distribution: West of Southern Europe, Caucasus.

Remarks: Occurs in the mid mountain xerophytous landscape. Inhabits stone slopes. In the mountains it reaches up to 1600 m. New record for Nakhchivan AR.

Subgenus *Pareucera* Tkalců, 1978

Eucera (*Pareucera*) *caspica* Morawitz, 1873

Material: Shakhbuz, Batabat, 2.VI.2004, 3 ♂♂, 2 ♀♀ (M. M.).

Biology: Feeds on *Thymus sipyleus* Boiss.

Distribution: Southern Europe (except for South-West), Caucasus.

Remarks: Occurs in the mid mountain xerophytous landscape. Inhabits borders of sparse forests and near bushes. In the mountains it reaches up to 2000 m. New record for Azerbaijan.

Subgenus *Agatheucera* Sitdikov et Pesenko, 1988

Eucera (*Agatheucera*) *vittulata* Noskievicz, 1934

Material: Shakhbuz, Batabat, 2.VI.2004, 5 ♂♂ (M. M.).

Biology: Feeds on *Nepeta cataria* L. and *Ononis spinosa hircina* (Jacq.) Gams.

Distribution: Europe, Caucasus.

Remarks: Occurs in the mid mountain steppe. Inhabits meadows, near lakes and bushlands. In the mountains it reaches up to 2000 m. New record for Nakhchivan AR.

Subgenus *Rhyteucera* Sitdikov et Pesenko, 1988

Eucera (Rhyteucera) vulpes Brullé, 1832

Material: Sharur, Akhura, 2.VI.2003, 2 ♂♂, 3 ♀♀ (K.H. A.).

Biology: Feeds on *Lotus corniculatus* L., *Trifolium pratense* L., and *Melilotus albus* Medik.

Distribution: Europe, Caucasus.

Remarks: Occurs in lower mountain semi-desert landscape. Inhabits fields. In the mountains it reaches up to 1300 m. New record for Nakhchivan AR.

Subgenus *Atopeucera* Tkalců, 1984

Eucera (Atopeucera) excisa Mocsary, 1879

Material: Ordubad, Agdara, 18.VI.1980, 3 ♂♂ (K.H. A.).

Biology: Feeds on *Trifolium canescens* Willd.

Distribution: Middle Europe, Caucasus.

Remarks: Occurs in high mountain meadows and meadow-steppe landscape. Inhabits grassy slopes and mountain meadows. In the mountains it reaches up to 2600 m. New record for Azerbaijan.

Eucera (Atopeucera) seminuda Brullé, 1832

Material: Djulfa, Darydag, 1200 m, 3.VI.2007, 1 ♂, 2 ♀♀ (M.M.).

Biology: Feeds on *Pyrus salicifolia* Pall., *Cerasus vulgaris* Mill., and *Thymus sipyleus* Boiss.

Distribution: South Europe, Caucasus.

Remarks: Occurs in lower mountain semi-desert landscape. Inhabits dry slopes, stony areas. In the mountains it reaches up to 1200 m. New record for Azerbaijan.

Subgenus *Stibucera* Tkalců, 1978

Eucera (Stibucera) clypeata Erichson, 1835

Material: Nakhchivan, 950 m, 14.VI.2007, 5 ♂♂ (M.M.); Shakhbuz, Batabat, 2.VI.2004, 2 ♀♀ (M.M.); same locality,

21.VI.2007, 4 ♀♀ (M.M.); Djulfa, Goynjuk, 1.VI.2006, 2 ♀♀ (M.M.).

Biology: Feeds on *Melilotus albus* Medik., *Potentilla argentea* L., and *Astragalus fragrans* Willd.

Distribution: South Europe, Caucasus, Middle Asia, Kazakhstan.

Remarks: Occurs in lower mountain semi-desert and in the mid mountain xerophytous landscape. Inhabits grassy slopes, meadows near lakes, border of sparse forest and bushes, gardens and steppe areas. In the mountains it reaches up to 2000 m. New record for Nakhchivan AR.

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