

# New and rare fungus gnats for the fauna of Bulgaria (Diptera: Nematocera: Mycetophilidae)

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**Abstract:** The paper provides information about two newly recorded species for the fauna of Bulgaria: *Docosia rohaceki* Sevcik, 2006 and *Leia graeca* Bechev, 1997 and new localities for another two rare species in Bulgaria. *Azana (A.) bulgarense* Coher, 1995 is proposed as a synonym of *Azana (A.) flavohalterata* Strobl, 1909.

**Keywords:** Balkan Peninsula, Bulgaria, Mycetophilidae, new localities, new records, new synonym

## Introduction

So far, 319 species of fungus gnats are known from the territory of Bulgaria (Bechev, 2006, 2010; Bechev & Pavlova, 2012, 2016; Kurina & Chandler, 2018; Pavlova, 2020; Pavlova & Stojanova (in press)). As a result of our study, here we present the first records of two species in Bulgaria and an update on the distribution of two species that have been previously recorded in the country only from single localities.

## Material and methods

Part of the material was collected within the framework of the project “Studies on biodiversity of model animal groups in Kermes Oak communities (*Quercus coccifera* L.), anthropogenic impact assessment and proposing protection measures” (Bulgarian National Science Fund No B-MU-1106/01) (Langourov & Simov, 2006). The rest of the material is gathered by the author. Three sampling techniques were used: traps, tree traps – white coloured modified Moericke traps (Langourov, 2001; Langourov & Simov, 2006), both filled with formalin or propylene glycol, and Townes

type Malaise trap. The traps were changed each month. The chosen localities are in critically endangered Mediterranean habitats in Bulgaria (Figs 1–2): shrubs and low woods of the Kermes oak (*Quercus coccifera*) (Gussev, 2015; Langourov et al., 2012) and forests of Grecian juniper (*Juniperus excelsa*) (Tzonev & Dimitrov, 2015).

The material is deposited in the author’s collection and in the collection of the National Museum of Natural History, Sofia.

## Results and discussion

List of records

Family Mycetophilidae

Subfamily Leiinae

*Docosia rohaceki* Sevcik, 2006

Examined material: Bulgaria: Western Rhodope Mts, Krichim, Izgoryaloto Gyune Reserve, N 42.0281; E 24.46926, 321 m, collecting period: iii.2019, tree traps:

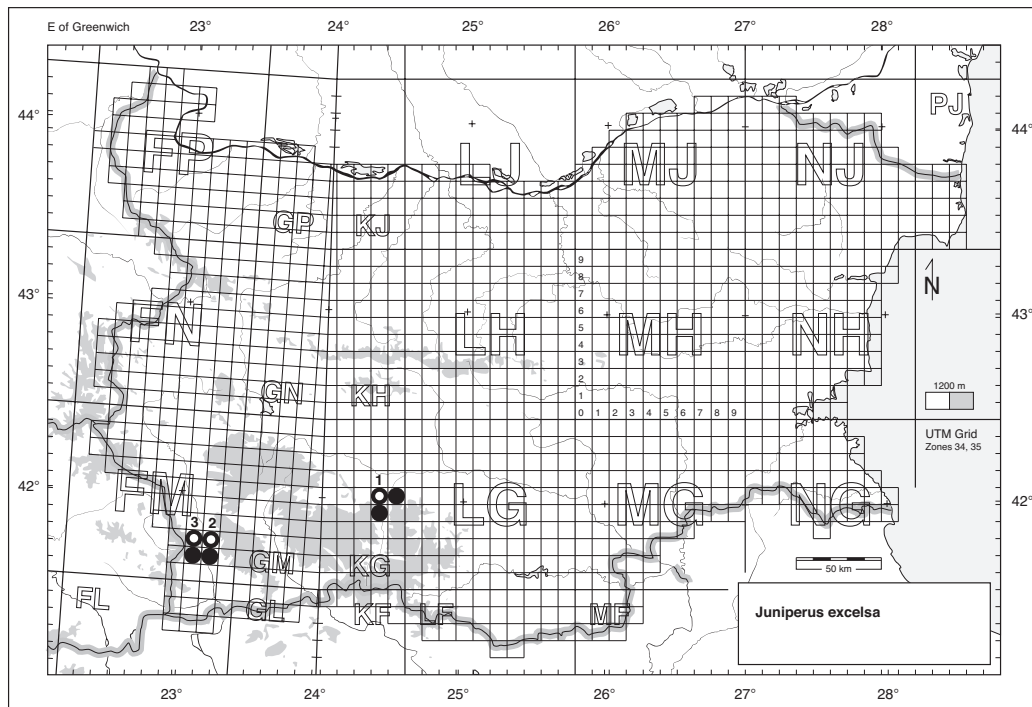


Fig. 1. Distribution of forest of Grecian juniper (*Juniperus excelsa*) after Tzonev & Dimitrov (2015); [circle] – localities; [black and white circle] – studied areas: 1 – Izgorialoto Gyune Reserve, 2 – 2 km south of Stara Kresna Village, 3 – Tisata Reserve.

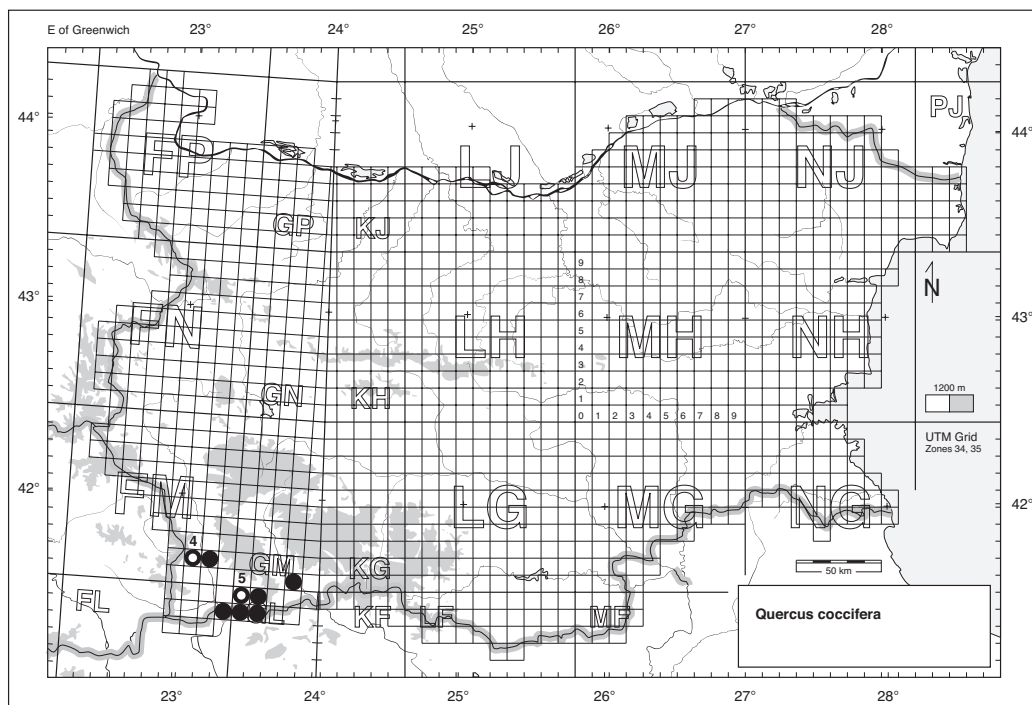


Fig. 2. Distribution of shrubs and low woods of Kermes oak (*Quercus coccifera*) after Gushev (2015) and Langourov et al. (2012); [circle] – localities; [black and white circle] – studied areas: 4 – 2 km south of Kamenitsa Village, 5 – St Iliya Peak, Kalimantsi Village.



Fig. 3. Dorsal view of the male genitalia of a specimen of *D. rohaceki* from Bulgaria: Western Rhodope Mts, Krichim, Izgoryaloto Gyune Reserve, N 42.0281; E 24.46926, 321 m, iii.2019, tree traps, leg. A. Pavlova.



Fig. 4. Lateral view of the male genitalia of a specimen of *L. graeca* from Bulgaria: Alibotush Mts, Kalimantsi Village, St Iliya Peak, N 41.46001; E 23.49058, 440–510 m, iv.2003, tree traps, leg. M. Langourov, S. Lazarov.

3 ♂♂, leg. A. Pavlova; Kresna Gorge, 2 km south of Stara Kresna Village, N 41.76257; E 23.16916, 203–400 m, collecting period: iii. 2019, pitfall traps: 1 ♂, leg. A. Pavlova, collecting period: iv.2003, Malaise trap: 2 ♂♂, leg. M. Langourov; Alibotush Mts, Kalimantsi Village, St Iliya Peak, N 41.46001; E 23.49058, 440–510 m, collecting period: xi.2002, tree traps: 480 ♂♂, leg. M. Langourov; collecting period: xii.2002, tree traps: 56 ♂♂, leg. M. Langourov, K. Ivanov, N. Simov; collecting period: i.2003, tree traps: 5 ♂♂, leg. S. Lazarov, N. Simov; collecting period: iv.2003, tree traps: 4 ♂♂, leg. M. Langourov, S. Lazarov.

New species for the fauna of the Balkan Peninsula. Previously, it has been known only from Slovakia (Ševčík, 2006). This is the most south-eastern record for the species. Photo of male genitalia of the studied specimens is presented on figure 3.

*Ectrepestoneura ledenikiensis* Bechev, 1988

Material examined: Bulgaria: Kresna Gorge, 2 km S of Stara Kresna Village, geographic coordinates: N

41.76257; E 23.16916, altitude: 203–400 m, collecting period: iv.2003, Malaise trap: 25 ♂♂, 5 ♀♀, leg. M. Langourov; Struma River Valley, 2 km south of Kamenitsa Village, geographic coordinates: N 41.63816; E 23.17005, altitude: 170–240 m, collecting period: x.2002, pitfall traps: 1 ♀, leg. M. Langourov.

The species is described from Bulgaria, Western Balkan Range, Vrachanska Planina, Ledenika (Bechev, 1988). Until now, it has been known only from its type locality and another one in Greece (Kurina, 2004). Balkan endemic. Based on the present observations, a wider range of the species could be expected.

*Leia graeca* Bechev, 1997

Material examined: Bulgaria: Kresna Gorge, 2 km south of Stara Kresna Village, N 41.76257; E 23.16916, 203–400 m, collecting period: iv.2003, Malaise trap: 6 ♂♂, 6 ♀♀, leg. M. Langourov; Struma River Valley, 2 km south of Kamenitsa Village, N 41.63816; E 23.17005, 170–240 m, collecting period:

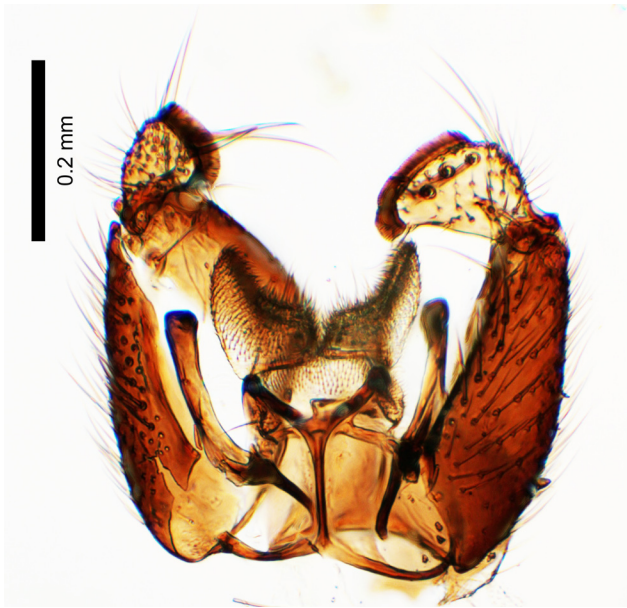


Fig. 5. Dorsal view of the male genitalia of a specimen of *A. flavohalterata* from Bulgaria: Kresna Gorge, Tisata Reserve, N 41.76691; E 23.15095, 146 m, v.2019, tree traps, leg. A. Pavlova.

iv.2003, tree traps: 1 ♂, 2 ♀♀, leg. M. Langourov; Alibotush Mts, Kalimantsi Village, St Iliya Peak, N 41.46001; E 23.49058, 440–510 m, collecting period: iv.2003, tree traps: 16 ♂♂, 4 ♀♀, leg. M. Langourov, S. Lazarov.

This is the first record of the species in Bulgaria. The species is known up to now with several localities from Greece (Bechev, 1997; Chandler et al., 2005). Balkan endemic species. Photo of lateral view of the male genitalia of the Bulgarian specimen is presented on figure 4. Unfortunately, part of gonostyle is a bit broken but it is still visible that is forked.

#### Subfamily Sciophilinae

*Azana (Azana) flavohalterata* Strobl, 1909

*Azana (Azana) bulgarensis* Coher, 1995: 87, plate 2 (male terminalia), **syn. nov.** Type. Holotype male, in the collection of the Department of Zoology, University of Plovdiv, Bulgaria: “Bulgaria: Strandzha Mt., Voden, 27/7/89, D. Bechev”.

Material examined: Bulgaria: Kresna Gorge, Tisata Reserve, N 41.76691; E 23.15095, 146 m, col-

lecting period: v.2019, tree traps: 1 ♂, 3 ♀♀; pitfall traps: 8 ♂♂, 11 ♀♀, leg. A. Pavlova; Struma River Valley, 2 km south of Kamenitsa Village, N 41.63816; E 23.17005, 170–240 m, collecting period: x.2019, tree traps: 1 ♂, leg. A. Pavlova.

Widespread in the Mediterranean region, recorded in Spain, Cyprus, Greece (Thessaly, Crete, Samos, Paxos, Milos) and Israel (Chandler, 1994; Chandler & Ribeiro, 1995; Chandler & Blasco-Zumeta, 2001; Kurina, 2004). In Bulgaria, until now it is reported from a single locality – the type locality of *A. bulgarensis* (Strandzha Mts). The unique male is described as a new species under the name *Azana (Azana) bulgarensis* by Coher (1995). According to Chandler & Blasco-Zumeta (2001), the genitalia that Coher (1995) had figured under the name *bulgarensis* seems identical with *Azana (A.) flavohalterata*. We found no structural difference in the male genitalia from typical *Azana (A.) flavohalterata* has been found (plate 2 in Coher, 1995; fig. 48 in Chandler & Blasco-Zumeta, 2001 and Fig. 5). Therefore, we concluded them to be conspecific and we proposed a new synonymy. The female specimens were associated with the male ones.

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