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**Eberhard Zielke**

Institute of Biodiversity and  
Ecosystem Research, Bulgarian  
Academy of Sciences, 1 Tsar  
Osvoboditel Blvd., Sofia,  
Bulgaria

## Update of distribution records of *Thricops* *Rondani* and other genera of the subfamily Azeliinae (Diptera: Muscidae) from Bulgaria

**Eberhard Zielke****Abstract**

Data on the distribution in Bulgaria are presented for Azeliinae species belonging to the genera *Achanthiptera* Rondani, 1856 (1 species), *Azelia* Robineau-Desvoidy, 1830 (3 species), *Drymeia* Meigen, 1826 (3 species), *Muscina* Robineau-Desvoidy, 1830 (4 species) and *Thricops* Rondani, 1856 (12 species). *Azelia nebulosa* Robineau-Desvoidy, 1830 and *Thricops diaphanus* (Wiedemann, 1817) are reported from Bulgaria for the first time and *Thricops beckeri* (Pokorny, 1893) is not only new to Bulgaria, but also to the Balkan Peninsula as well as to Eastern and South-eastern Europe. Apart the species of the genus *Hydrotaea* Robineau-Desvoidy, 1830, the total number of species of the subfamily Azeliinae which are known from the country, reaches now 32 species. The results are summarized in a table and compared with corresponding data of the neighbouring countries.

**Keywords:** Bulgaria, Balkan Peninsula, Muscidae, Azeliinae, New Records, Comparison

**Introduction**

Azeliinae with close to 350 species all over the world <sup>[1]</sup> is one of the smaller subfamilies of the Muscidae. Similar to other subfamilies, Azeliinae species can be found worldwide and in different biotopes. The composition of the subfamily has been adapted several times in the past <sup>[2]</sup>. According to Fauna Europaea (Pont 2013) <sup>[3]</sup> Azeliinae are represented in the European part of the Palaearctic Region by the genera *Muscina* Robineau-Desvoidy, 1830 and *Synthesiomyia* Brauer & Bergenstamm, 1893 of the tribe Reinwardtiini and by *Azelia* Robineau-Desvoidy, 1830, *Drymeia* Meigen, 1826, *Huckettomyia* Pont & Shinonaga, 1970, *Hydrotaea* Robineau-Desvoidy, 1830, *Potamia* Robineau-Desvoidy, 1830 and *Thricops* Rondani, 1856 of the tribe Azeliini. As suggested earlier by Skidmore <sup>[4]</sup> the genus *Achanthiptera* Rondani, 1856 of the previous subfamily Achanthipterinae has been added to the tribe Azeliini in 2014 by Kutty *et al.* <sup>[5]</sup> based on the results of molecular and morphological investigations.

Ninety Azeliinae species are listed by Fauna Europaea <sup>[3]</sup> from the European part of the Palaearctic Region. The most species-rich genera of the subfamily in Europe are *Hydrotaea* and *Thricops* with 37 and 26 registered species, respectively. *Azelia* is represented by nine species, *Drymeia* by eight and *Muscina* by six species, of the latter genus five species are reported by Fauna Europaea <sup>[3]</sup> and an additional species new to science has been discovered recently <sup>[6]</sup>. Two species constitute the genus *Potamia*, and each of the genera *Achanthiptera* and *Synthesiomyia* contains worldwide one species only <sup>[1]</sup>. *Huckettomyia* comprises two species worldwide <sup>[7]</sup>, but only one has been recorded from Europe <sup>[8]</sup>.

The Muscidae known from Bulgaria were catalogued only in 2003 by Lavčiev <sup>[9]</sup>, and Hubenov <sup>[10]</sup> summarized in 2016 the recorded Diptera from the Rila Mountains of the country. Whilst 47 Azeliinae species are listed in the catalogue <sup>[9]</sup> from Bulgaria, 12 species of the sub-family were recorded from the Rila Mountains <sup>[10]</sup>. Since the latter publication is also limited to a specific area of Bulgaria, the catalogue <sup>[9]</sup> has been chosen as the base with which the results of the current study of the Azeliinae from Bulgaria are compared. As addressed already in a previous contribution <sup>[11]</sup>, unfortunately specific information such as numbers, sex, localities and dates for the flies collected are sparse in the catalogue and more importantly no details are given where the specimens of the listed species were deposited.

The above genera were the subject of this update, with the exception of the genus *Hydrotaea*, which will be dealt with in another contribution because of the complexity of assigning females of some species-groups to a certain species.

**Correspondence****Eberhard Zielke**

Institute of Biodiversity and  
Ecosystem Research, Bulgarian  
Academy of Sciences, 1 Tsar  
Osvoboditel Blvd, Sofia,  
Bulgaria

About 1.125 specimens belonging to five genera were examined and determined from 2015 until end of 2018. The majority of the specimens were primarily found in the Muscidae collection of the Institute of Biodiversity and Ecosystem Research (IBER), of the Bulgarian Academy of Sciences, Sofia. Further, the Diptera collections of the National Museum of Natural History (NMNHS), Sofia of the Bulgarian Academy of Sciences and of the Regional Natural History Museum of Plovdiv (RNHMP) were screened for specimens of Azeliinae. The present update revealed 23 species collected in Bulgaria in the period between 1907 and 2018 and increases the total number of Azeliinae without *Hydrotaea* species in Bulgaria from 28 to 32 species. The findings are summarized in a table and compared with corresponding data from adjacent countries.

### Materials and Methods

For identification primarily the keys to the Muscidae of the Palaearctic Region [12], the keys to the Muscidae of Central Europe [13, 14] and additionally keys provided for the genera *Azelia* [15], *Muscina* [6] and *Thricops* [16, 17] were used. External morphological features of the specimens were examined using a Zeiss Stemi stereomicroscope.

For the classification of the Muscidae and synonyms, this contribution follows Gregor *et al.* [14]. Genera and their species are listed alphabetically, and the sites of collection chronologically. The names of the collectors are mentioned as well as the persons who identified specimens before this study. The initials "V. L." stand for Valentin Lavčiev who collected in his lifetime the majority of the Muscidae specimens of the collection of IBER. No Azeliinae were found among the muscids of RNHMP, and the majority of the specimens originating from the collections of IBER and NMNHS were not identified. Those persons who identified specimens before this study are named as "det." Many of the identified specimens, however, were marked only with a provisional handwritten species label, which unfortunately do not name the identifier or supply the date of identification. Since the vast majority of these flies were collected by Lavčiev, it can be assumed that he or members of his team were responsible for at least a large part of this provisional labelling. Therefore specimens with such labels are assigned to "det. V. L.". Details on species provided by Lavčiev [9] are commented upon and compared with present findings when pertinent. Only examined material originating from NMNHS is marked as such in the compilation below.

All specimens examined were again deposited in the entomological collections from which they were taken for examination.

### Results

***Achanthiptera rohrelliformis*** (Robineau-Desvoidy, 1830): Material examined: 1♂ Sofia, August 1907, Nedelk off. Genus and species were first reported [18] of Bulgaria and the Balkan Peninsula in 2018.

***Azelia cilipes*** (Haliday, 1838): Material examined: 1♂ Ropotamo, 09.07.1966, V. L.; 1♂ Stara Planina, Svoge, 11.07.1973, S. Gateva; 1♀ Shumen distr., hut Bukasite, 17.6.1976, V. L.; 3♀ Shumen distr., hut Bukasite, 30.9.1976, V. L.

Lavčiev [9] reported the species from W. Rodopi Mts., town Chepelare, 30.06.1975, 1♂2♀ on vegetation; the species is not listed for Bulgaria by Fauna Europaea [3].

***Azelia nebulosa*** Robineau-Desvoidy, 1830: Material examined: 1♀ Vitosha Mts., 1.300 m, 26.8.1964, V.L.; 1♂ Pirin Mts., Popina Laka, 1.300 m, 29.07.1966, V. L.; 1♀ Teteren, 22.06. 1972, V. L.; 1♀ Shumen distr., hut Bukasite, 30.9.1976, V. L.; 2♀ W. Stara Planina, Reserve Gomata Koriya (N43 10.934 E23 04.472), P. Mitov. New for Bulgaria.

*A. nebulosa* was hitherto not known from Bulgaria but it is reported from the adjacent countries Romania and Greece [3].

***Azelia triquetra*** (Wiedemann, 1817): Material examined: 1♀ Petrochan, 04.07.1964, V. L. Lavčiev [9] reported the species from Sredna gora Mts. - around Kazanluk, 13.06.1968, 2♀ and from the village Kokaliane, Sofia distr., 9.08.1954, 2♀. The females were not found among the material screened.

***Drymeia alpicola*** (Rondani, 1870): Material examined: 4♀ Central Rodopi Mts., 1.900 m, 21.06.1925, P. Drenski; 8♂ 17♀ Stara Planina, Botev Peak, 2.367 m, 20.07.1941, P. Drenski; 5♂2♀ Vitosha Mts., above Sredets hut, 04.06.1954, P. Drenski; 2♂ Vitosha Mts., hut Aleko, 09.07.1954, P. Drenski; 1♀ Vitosha Mts. (V27), 2.200-2.250 m, 17.07.1976, V. Guèorguiev; 1♀ Vitosha Mts. (V34), 2.210-2.220 m, 08.07.1977, V. Guèorguiev, det. V. L.

Lavčiev [9] listed six sites in Bulgaria where *D. alpicola* was collected between June 1954 and June 1970. Two of the records above are also mentioned, namely 10♂ and 2♀ of the Vitosha Mts. - near the hut Sredets, 21.06.1954 and 2♂ from hut Aleko collected at 09.07.1954. However, only five of the ten males from Sredets hut and the 2♂ of Aleko hut were found among the material. The specimens were not marked by species-labels.

***Drymeia hamata*** (Fallén, 1823): Material examined: 1♀ Stara Planina, Botev Peak, 2.367 m, 20.07.1941, P. Drenski; 1♂ Vitosha Mts., above Sredets hut, 04.06.1954, P. Drenski. NMNHS: 1♀ Vitosha Mts., hut Aleko, 1.800 m, 13.08.1948, P. Drenski.

The species is not reported by Lavčiev [9], but it is listed [3] for Romania and Bulgaria.

***Drymeia vicana*** (Harris, 1780): Material examined: 2♀ Rila Mts., x. Musula, 29.07.1936, P. Drenski; 1♀ Central Balkan, Kozia stena, 25.06.1940, P. Drenski; 1♀ Zabardo Smollansko, 11.05.1963, V. L.; 1♀ Rodopi Mts., Perelik, 09.06.1963, V. L.; 1♀ Bel v Kom, 11.07.1963, V. L.; 4♀ Rodopi Mts., x. Perelik, 09.08.1963, V. L.; 1♀ Rodopi Mts., Siutka, 14.08.1963, V. L.; 1♀ Belogradchischko, Bialata Voda, 20.09.1963, V. L.; 2♀ Petrochan, 24.09.1963, V. L.; 1♀ Stara Planina, Midjur, 01.08.1964, V. L.; 1♀ Rodopi Mts., Yndula, 23.08.1965, V. L.; 1♀ Rodopi Mts., Prezlazcha, 25.08.1965, V. L.; 1♂ Rila Monestry to Passtra, 28.10.1965, V. L.; 1♀ Belogradchischko, Bialata Voda, 15.08.1966, V. L.; 8♀ W. Stara Planina, Bel v. Kom, 16.08.1966, V. L.; 2♀ Teteven distr., Ribaritsa, at river, 15.05.1968, V. L.; 1♀ Hut Tuzha, near to river, 1.510 m, 17.05.1968, V. L.; 1♀ below hut Tuzha, meadow, 19.05.1969, V. L.; 1♀ Rodopi Mts., Pamporovo, 24.06.1969, V. L.; 1♀ Rodopi Mts. Perelik, 2.000 m; 30.07.1969, V. L.; 1♀ Rodopi Mts., Trigrad Tschaira, 24.06.1970, V. L.; 1♀ Beklemeto Pass, 1.000 m, 16.05.1972, V. L.; 1♀ Kalofer Town, 16.05.1972, V. L.; 1♀ Stara Planina, near to Vezhen hut, 22.06.1972, V. L.; 1♀, Dosspat distr., N of Kusak (41°39'10"N, 24°12'25"E), 1.386 m, 07.08.2018, E. Zielke. NMNHS: 1♀ Rodopi Mts., Tcham

Koria, 21.07.1925, P. Drenski; 1♂19♀ Rodopi Mts., Tcham Koria, 17.07.1935, P. Drenski; 3♀ Rodopi Mts., Tcham Koria, 17.08.1935, P. Drenski; 1♀ Rila Mts., x. Musula, 29.07.1936, P. Drenski.

One of the four females of *D. vicana*, collected at Perelik 9.08.1963 was labelled as *Hydrotea* n. sp. Three males and three females of *D. vicana* are reported from six sites in Bulgaria<sup>[9]</sup>, located mainly at Stara Planina or Vitosha Mts., the specimens were collected between June 1955 and June 1972. None of the specimens was found among the material examined.

***Muscina levida*** (Harris, 1780): Material examined: 1♀ Lozen Mts., Germanski m., 01.08.1914, Dr. I. Buresch; 1♂ Sofia, 20.05.1934, P. Drenski; 1♀ Balkan, Troyanski, 16.08.1940, P. Drenski; 1♀ Vitosha Mts., above Dragolevski Monastery, 12.08.1948, P. Drenski; 1♀ Ropotoma, 26.06.1963, V. L.; 3♂4♀ Belogradtschischko, Sel. Jzvor, 05.07.1963, V. L.; 3♂1♀ W. Balkan, Chaiduschki vodopadi, 09.07.1963, V. L.; 1♂1♀ Petrochan, 10.07.1963, V. L.; 1♀ Klisurski m-r, 10.07.1963, V. L.; 1♂ Bel v. Kom, 11.07.1963, V. L.; 1♂ Sofia distr. Zerovo, 27.07.1963, V. L.; 1♀ Jvailovgrad, 03.08.1963, V. L.; 2♀ Krumovgrad, 04.08.1963, V. L.; 1♂2♀ Primorsko, 05.09.1963, V. L.; 1♂ St. Zagora Alazamoto, 10.09.1963, V. L.; 1♂ Stara Planina, Biloto 19.09.1963, V. L.; 1♂2♀ Stara Planina, m. Lekla, 20.09.1963, V. L.; 1♀ Petrochan, 24.09.1963, V. L.; 9♀ Klisurski m-r, 25.09.1963, V. L.; 2♂3♀ Petrochan, 04.07.1964, V. L.; 1♂1♀ Rakovischki m-r, 27.07.1964, V. L.; 1♀ Belogradtschik-Lepaviza, 29.07.1964, V. L.; 1♀ Vidin distr., Jzvoz, 29.07.1964, V. L.; 1♂2♀ Stara Planina, Vedrenik, 30.07.1964, V. L.; 5♂5♀ Belogradtschik-Lepaviza, 31.07.1964, V. L.; 3♂7♀ Ledenika Vratschansko, 05.08.1964, V. L.; 1♂ x. Parschevitsa, 15.09.1964, V. L.; 5♂ Rakovischki m-r, 17.09.1964, V. L.; 1♀ Vraschka tschuka, 17.09.1964, V. L.; 1♂ Vidin distr., Gramatikovo, 18.09.1964, V. L.; 3♂2♀ Vidin distr., TKZC Praudja, 19.09.1964, V. L.; 1♂ Dolni Bogov, 29.05.1965, V. L.; 1♂ Dolni Bogov, 29.05.1965, D. Gogov; 1♀ Burgas distr., Arkutino, 12.06.1965, V. L.; 1♀ Primorsko, 09.07.1965, V. L.; 1♂ Primorsko, 10.07.1965, V. L.; 1♀ Trigrad-Tschaira, 25.07.1965, V. L.; 1♀ Smollansko, Stolkite, 26.07.1965, V. L.; 5♀ Pirin Mts., Begoviza, 13.07.1966, V. L.; 1♀ Rodopi Mts., Yundola, 26.07.1966, V. L.; 1♀ Rodopi Mts., Matan dere, 27.07.1966, V. L.; 3♀ Pirin Mts., Popina Laka, 1.300m, 29.07.1966, V. L.; 1♀ Bilata Voda, 14.08.1966, V. L.; 1♂2♀ W. Stara Planina, Klisurski m-r, 15.08.1966, V. L.; 2♂ W. Balkan, Zanogene, 17.08.1966, V. L.; 1♀ W. Balkan, Parschevitsa, 18.08.1966, V. L.; 1♀ Pirin Mts., Predel Pass, 12.06.1967, V. L.; 1♂ Yakoruda, 1.000 m, 13.07.1967, V. L.; 1♂ Rodopi Mts., Smolanski Ezera, 13.07.1969, V. L.; 1♂ Rodopi, Krumovgrad, 21.06.1970, V. L.; 2♂ Panagyurishte, Banya vill., 08.08.1971, V. L.; 1♂ Kasanluk Krunska, Korya, 17.05.1972, V. L.; 1♀ Sofia, 13.07.1976, V. L.; 1♂1♀ Tshuman distr., Hut Bukatzite, 300 m, 29.09.1976, V. L.; 5♂5♀ Devin distr., SW of Ossikovo (41°53'40"N24°26'09"E), 576 m, 05.08.2018, E. Zielke; 5♂ Zlatograd distr., E. of Zlatograd (41°32'48"N24°52'53"E), 405 m, 06.08.2018, E. Zielke; 1♀ Smolyan distr., SE of Turun (41°32'48"N24°52'53"E), 689 m, 06.08.2018, E. Zielke; 1♂ Dosspat distr., NE of Lyubcha, (41°33'03"N24°07'30"E), 1.376 m, 07.08.2018, E. Zielke; 3♂3♀ Sandanski distr. E of Pirin (41°31'37"N23°36'01"E), 1.205 m, 08.08.2018, E. Zielke.

The species is characterized<sup>[9]</sup> as "hemisynanthrope, spread

all over the country" without mentioning single localities where specimens of *M. levida* were caught.

***Muscina pascuorum*** (Meigen, 1826): Material examined: 1♀ Sofia, 27.05.1934, P. Drenski; 1♀ South Bulgaria, Revier Kritschim, 18.05.1940, Dr. Buresch; 1♀ Stara Planina, Mara Gidek, 2.166 m, 20.07.1941, P. Drenski; 1♀ Sofia distr., Zerovo, 27.07.1963, V. L.; 1♂ W. Stara planina, m. Lekia, 20.09.1963, V. L.; 1♂ Bel v. Kom, 27.09.1963, V. L.; 1♀ Rakovischki m-r, 27.07.1964, V. L.; 1♂ Ledenika Vratschansko, 05.08.1964, V. L.; 1♀ Pirin Mts., Popina Laka, 1.300m; 29.07.1966, V. L.; 1♀ Stara planina, Ribaritsa, 14.08.1969, V. L.

The female collected in Sofia 27.05.1934 by Drenski was labelled as "*Musc. pasc. ?* or *Musc. pab. ?*". The latter one, *Muscina pabulorum* (Fallén, 1817) is a synonym of *Muscina prolapsa* (Harris, 1780). The female from Zerovo, Sofia distr. 27.07.1963 was marked as "*Muscina* sp. ?" and the males originating from Stara Planina, m. Lekia 20.09.1963 and Bel v. Kom 27.09.1963 respectively were labelled as *M. prolapsa*. Lavčiev<sup>[9]</sup> only mentions "Western Stara Planina Mts., Dobrich, Sofia Rhodopes Mts." without giving further details on localities where the species had been collected.

***Muscina prolapsa*** (Harris, 1780): Material examined: 1♀ Sofia, 06.06.1932, P. Drenski; 1♀ Sofia, 15.05.1934, P. Drenski; 1♀ Sofia, 18.05.1934, P. Drenski; 1♀ Sofia, 20.05.1934, P. Drenski; 1♀ Sofia, 07.06.1934, P. Drenski; 1♀ Sofia, 08.06.1934, P. Drenski; 1♀ Sofia, July 1934, P. Drenski; 1♀ Belogradtschick, 04.07.1963, V. L.; 2♀ Sofia distr., Zerevo, 27.07.1963, V. L.; 1♀ Trigrad, 11.08.1963, V. L.; 1♀ Burgas distr., Arkutino, 30.08.1963, V. L.; 1♀ Primorsko, 02.09.1963, V. L.; 1♀ Klisurski m-r, 25.09.1963, V. L.; 1♀ Sofia 06.04.1964, V. L.; 2♀ Blagoevgrad, 4-15.05.1964, V. L.; 1♂ Belgradtschick-Lepavitsa 29.07.1964, V. L.; 1♂8♀ Vraschka Tschuka 17.09.1964, V. L.; 1♂ Rakovischki m-r, 17.09.1964, V. L.; 1♂ Vidin distr., Gramatikovo, 18.09.1964, V. L.; 2♀ Burgas distr., Arkutino, 12.06.08.1965, V. L.; 1♂ Ropotamo, 07.07.1965, V. L.; 1♂1♀ Primorsko, 09.07.1965, V. L.; 1♂ Sandanski, 03.11.1965, V. L.; 1♂ Petritch distr., nr. Strumeshniza river, 04.11.1965, V. L.; 2♂ Strandsha Mts., Picmenovo vill., 11.11.1965, V. L.; 1♀ Stakevtsi, 12.06.1966, V. L.; 1♀ Klisurrski m-r, 15.08.1966, V. L.; 1♀ Kranevo, 26.06.1968, leg. n. a.; 1♂ x. Smolayanski ezera, 1.500 m; 24.07.1968, V. L.; 1♀ Rodopi Mts., Dabovets; 18.06.1969, V. L.; 1♀ Rodopi Mts., Trigrad; 25.06.1969, V. L.; 1♀ Rodopi Mts., Momchilgrad; 22.06.1970, V. L.; 3♂2♀ Kasanluk Krunska Korya, 17.05.1972, V. L.; 1♀ Shumen distr., Hut Bukasite, 17.06.1976, V. L.; 1♀ Sofia, ul. Elin Pelin, 23.08.2014, E. Zielke; 1♀ Sofia, ul. Elin Pelin, 01.09.2014, E. Zielke; 1♂1♀ Sofia, Lozenets, August 2015, E. Zielke; 1♂ Sofia, ul. Elin Pelin, 30.07.2017, E. Zielke; 1♀ Devin distr., SW of Ossikovo (41°53'40"N24°26'09"E), 576 m, 05.08.2017, E. Zielke.

The species is described<sup>[9]</sup> as "hemisynanthrope, spread all over the country".

***Muscina stabulans*** (Fallén, 1817): Material examined: 1♀ Sofia, 20.11.1913, Dr. Buresch; 1♂ Sofia, 17.09.1922, P. Drenski; 1♂1♀ Sofia, 06.06.1925, P. Drenski; 1♀ Varna, 18.06.1926, P. Drenski; 1♀ Sofia, 20.03.1927, P. Drenski; 1♀ Sofia, 22.03.1927, P. Drenski; 1♀ Varna, 22.03.1927, P. Drenski; 5♂ Sofia, 06.06.1927, P. Drenski; 3♀ Sofia,

15.05.1934, P. Drenski; 1♀ Sofia, 20.05.1934, P. Drenski; 1♀ Sofia, 27.05.1934, P. Drenski; 1♀ Plovdiv, 02.08.1959, n. a.; 1♀ Belogradtschik, 04.07.1962, V. L.; 1♀ Tamovo, 06.05.1963, V. L.; 4♂5♀ Harmanli, 08.05.1963, V. L.; 1♀ Topolovgrad, 08.05.1963, V. L.; 5♂1♀ Sofia, 14.06.1963, V. L.; 1♂ Mitschurin, 26.06.1963, V. L.; 4♂ Burgas distr., Rezovo, 27.06.1963, V. L.; 2♂ Burgas distr., Obzor, 29.06.1963, V. L.; 2♂1♀ Belogradtschischko, Sel. Tschuprene, 05.07.1963, V. L.; 2♂ Berkovski Balkan, 08.07.1963, V. L.; 1♂ Berkovitsa, 08.07.1963, V. L.; 1♂ Sofia distr., Zerovo, 27.07.1963, V. L.; 1♂ Momchilgrad 05.08.1963, V. L.; 1♀ Zlatograd, 06.08.1963, V. L.; 2♀ Primorsko, 31.08.1963, V. L.; 1♂1♀ Primorsko, 04.09.1963, V. L.; 6♀ Primorsko, 05.09.1963, V. L.; 1♀ St. Zagora, Alazmoto, 10.09.1963, V. L.; 1♂ Belogradtschik, 29.07.1964, V. L.; 1♀ Berkovitsa, 02.08.1964, V. L.; 1♀ Blagoevgrad, 04.-15.05.1964, V. L.; 5♀ Vratsa distr., Ledenika, 05.08.1964, V. L.; 1♂ Sofia, 04.09.1964, V. L.; 1♀ Primorsko, 16.06.1965, V. L.; 1♂ Ljulin, 25.06.1965, V. L.; 1♀ Primorsko, 10.07.1965, V. L.; 1♂ Belogradtschik, 24.05.1966, V. L.; 1♀ Primorsko, 08.07.1966, V. L.; 1♀ Ropotamo, 09.07.1966, V. L.; 1♀ Rodopi Mts., Yndola, 26.07.1966, V. L.; 1♀ Sandanski, 27.07.1966, V. L.; 1♀ Pirin Mts., Popina Laka, 1.300 m, 29.07.1966, V. L.; 3♀ Primorsko, 28.08.1966, V. L.; 1♂ Momchilgrad, 03.06.1967, V. L.; 2♂2♀ Mitschurin, 30.06.1967, V. L.; 1♀ Mitschurin, 10.07.1967, V. L.; 2♀ Yakoruda, 1.000 m, 13.07.1967, V. L.; 2♀ Svoje town, meadow, 10.05.1968, V. L.; 6♂4♀ near Troyanski monastery, 16.05.1968, V. L.; 1♀ Hut Tuzha, near to river, 1.520 m, 17.05.1968, V. L.; 1♂ near to Kalofer town, 17.05.1968, V. L.; 2♂ Sleven distr., near Byala vill., 600 m, 02.06.1968, V. L.; 1♂ Tvardishka Mts., Sheshingrad, 03.06.1968, V. L.; 1♂ x. Perelik, 2.100 m, 24.07.1968, V. L.; 1♀ Rodopi Mts., Mandritsa, 19.06.1969, V. L.; 2♀ Stara Planina Mts., Botev Peak, Kalof town, 17.08.1969, V. L.; 1♂ Rodopi Mts., Momchilgrad, 22.06.1970, V. L.; 1♂ Stara Planina, Gloshe, 13.05.1972, V. L.; 2♂ Kasanluk Krunska, Korya, 17.05.1972, V. L.; 1♂ Petritsch, 21.04.1973, n. a.; 1♂1♀ Sofia, 14.05.1976, V. L.; Shumen distr., hut Bukasite, 30.09.1976, V. L.; 1♂2♀ Sofia, Lozenets, Aug. 2015, E. Zielke; NMNHS: 1♂ Sofia, 1907, Nedelkoff; 3♀ Sofia, July 1934, P. Drenski.

According to the catalogue <sup>[9]</sup> *M. stabulans* is "synanthrope, spread all over the country, males are often on flowers, females in rooms."

***Thricops aculeipes*** (Zetterstedt, 1838): Material examined: 3♂2♀ Rila Mts., x. Musula, 29.07.1936, P. Drenski; 1♀ Rodopi Mts.

Lavčiev <sup>[9]</sup> mentioned this species from Vitosha Mts., 10 ♀ collected at 13.07.1992.

***Thricops beckeri*** (Pokorny, 1893): Material examined: 2♀ Rila Mts., x. Musula, 29.07.1936, P. Drenski; NMNHS: 1♀ Rila Mts., Tcham Koria, 17.08.1935, P. Drenski. New for Bulgaria and the Balkan peninsula.

The species is only known <sup>[3]</sup> from the Mediterranean countries France, Italy and Spain and from the Central European countries as defined by Gregor *et al.* <sup>[14]</sup> except Hungary. So far, it was not reported from countries of Western, Northern and Eastern Europe and from the Balkan Peninsula.

***Thricops cunctans*** (Meigen, 1826): Material examined:

15♂21♀ Rila Mts., x. Musula, 29.07.1936, P. Drenski; 1♂ Rila Mts., Tcham Koria, 30.08.1936, P. Drenski; 2♀ Rodopi Mts., Yundola, 1.850 m, 11.08.1939, P. Drenski; 2♂24♀ Rodopi Mts., N of Siutka peak, forest, 25.07.1964, V. L.; 1♂ Rodopi Mts., Kara bair, 29.07.1965, V. L.; 2♂ x. Perelik, 2.100 m, 24.07.1968, V. L.; 3♂2♀ Rodopi Mts., Pamporovo, 24.06.1969, V. L.; 1♂ Rodopi Mts., x. Studenez, 24.06.1969, V. L.; 2♀ Rodopi Mts., Smolianski Ezera, 24.06.1969, V. L.; 1♀ Rodopi Mts., Smolianski Ezera, 25.06.1969, V. L.; 1♂6♀ Rodopi Mts., Siutka, 25.07.1969, V. L.; 1♀ Rodopi Mts., Krumovgrad, 21.06.1970, V. L.; 1♀ Teteren, Ribaritsa, 22.06.1972, V. L.; 1♂1♀ Stara Planina., near to Vezhen hut, 22.06.1972, V. L., det V. L.; 1♀ Skribotna, 24.06.1972, V. L.; 1♀ Vitosha Mts. (V33), 2.130 m, 08.07.1977, V. Guèorguiev ; 2♂ Vitosha Mts., fish lakes, 13.07.1991, leg. & det. E. Kozuharova; 1♀ Vitosha Mts., 03.09.1991, leg. & det. E. Kozuharova; 1♀ Vitosha Mts., 04.09.1991, leg. & det. E. Kozuharova; 1♂ Vitosha Mts., 1.000 m, 26.07.1992, n. a.; 1♀ Vitosha Mts., 1.000 m, 13.08.1992, n. a., det. V. L. NMNHS: 1♀ Rila Mts., Tcham Koria, 17.07.1935, P. Drenski; 4♂1♀ Rila Mts., Tcham Koria, 17.08.1935, P. Drenski; 5♂1♀ Rila Mts., Tcham Koria, 30.08.1936, P. Drenski.

Lavčiev <sup>[9]</sup> listed various mountains of Bulgaria such as Central Stara Planina, Pirin Mts., Rila Mts., Vitosha Mts. and Western Rhodopes Mts. where the species had been found on flowers. The role as pollinator of this and some other *Thricops* species in the mountain areas of Bulgaria has been studied in more details by Kozuharova <sup>[19]</sup>. *T. cunctans* is mentioned <sup>[3]</sup> from Bulgaria and Romania.

***Thricops diaphanus*** (Wiedemann, 1817): Material examined: 1♂ Rila Mts., Tcham Koria, 24.08.1924, P. Drenski. New for Bulgaria.

The species is not listed by Lavčiev <sup>[9]</sup> but it is also reported from Romania <sup>[3]</sup>.

***Thricops genarum*** (Zetterstedt, 1838): Material examined: 5♂3♀ Rodopi Mts., Yundola, 1.850 m, 11.08.1939, P. Drenski; 1♂3♀ Rodopi Mts., Yundola, 1.500 m, 13.08.1939, P. Drenski; 1♂ Rodopi Mts., Yundola, 1.500 m, 19.09.1939, V. L., det V. L.; 2♀ Vitosha Mts., 1.300 m, 26.08.1964, V. L.; 1♂ Rodopi Mts., Kara bair, 29.07.1965, V. L.; 2♀ Vitosha Mts., 09.08.1965, V. L.; 1♂ Rodopi Mts., Studenez, 24.06.1969, V. L., det. V.L.: 1♂ 5♀ Rodopi Mts., Pamporovo, 24.06.1969, V. L.

Lavčiev <sup>[9]</sup> used still the name *Thricops sundewalli* (Zetterstedt, 1845) in spite of the synonymization with *T. genarum* and he listed the following sites where specimens were collected: "Western Rhodopes Mts. - on the foot of peak Siutka, 14.08.1963, 1♀; Vitosha Mt., 26.05.1964, 1♀; Pirin Mts. - around hut Bunderitsa, 16.07.1968, 1♂". The three specimens were not found among the material examined.

***Thricops innocuus*** (Zetterstedt, 1838): Material examined: 2♀ Vitosha Mts., hut Aleko, 1.800 m, 13.08.1948, P. Drenski; 2♀ Rodopi Mts., Siutka, 25.07.1969, V. L.

Lavčiev <sup>[9]</sup> listed one male from "Western Stara Planina Mts. - near town Berkovitsa, 25.10.1963, 1 ♂ on meadow" and two females from Siutka of the Rodopi Mts. with almost identical data as mentioned above. *T. innocuus* is reported <sup>[3]</sup> for Bulgaria as "doubtfully present" and is not reported for the neighbouring countries.

***Thricops longipes*** (Zetterstedt, 1845): Material examined: 1♀

Rila Mts., Tcham Kuria, 15.-25.07.1921, Dr. I. Buresch; 1♀ Rila Mts., Tcham Kuria, 25.-30.07.1921, P. Drenski; 1♀ Rila Mts., Tcham Kuria, 1.-10.08.1922, P. Drenski; 1♂ Rila Mts., Musala hut, 2.400 m, 29.07.1936, P. Drenski; 1♂7♀ Rila Mts., x. Musala, 29.07.1936, P. Drenski; 1♂ Rila Mts., Solenere - Sitnyakovo, 04.08.1936, P. Drenski; 1♀ Vitosha Mts., hut Aleko, 1.500 m, 13.08. 1948, P. Drenski; 6♀ Vitosha Mts., hut Aleko, 1.800 m, 25.07.1949, P. Drenski; 1♂ Vitosha Mts., hut Sredetz, 04.06. 1954, P. Drenski; 2♀ Vitosha Mts., Boyana, 1.300 m, 04.06.1954, P. Drenski; 2♀ Vitosha Mts., hut Aleko, 09.07.1954, P. Drenski; 1♂ Vitosha Mts., above Boyana vill., 1.300 - 1.400 m, 04.06.1960, P. Drenski; 2♀, Rodopi Mts., Smollanski Ezera, 22.07.1965, V. L.; 2♂3♀, Rodopi Mts., Smollansko Stolkite, 26.07.1965, V. L.; 3♂1♀, Rodopi Mts., Smolyan, 27.07.1965, V. L.; 1♂1♀, Rodopi Mts., Studenez, 28.07.1965, V. L., det. V. L.; 6♀, Rodopi Mts., Pamporovo, 28.07.1965, V. L.; 3♀, Rodopi Mts., Er. Kiupria, 28.07.1965, V. L.; 1♂1♀, 1Rodopi Mts., Rojen, 28.07.1965, V. L.; 6♀, Rodopi Mts., x. Persenk, 30.07.1965, V. L.; 4♀ Pirin Mts., Begovitsa, 13.07.1966, V. L.; 1♂1♀ Pirin Mts., Popina Laka, 1.300 m, 13.07.1966, V. L.; 1♂1♀ Pirin Mts., Preslapa peak, 444 m, 27.07.1967, N. Atanasov; 19♂5♀ Rodopi Mts., Pamporovo, 24.06.1969, V. L.; 1♀ Rodopi Mts., Smollanski Ezera, 24.06.1969, V. L.; 6♂6♀ Rodopi Mts., Trigrad, 25.06.1969, V. L.; 3♂2♀ Rodopi Mts., Smollanski Ezera, 25.06.1969, V. L.; 1♀ Rodopi Mts., Krumovgrad, 21.06.1970, V. L.; 4♂9♀ Rodopi Mts., Trigrad Tschaira, 24.06.1970, V. L.

Lavčiev <sup>[9]</sup> reported the species from Pirin Mts., Rila Mts., Vitosha Mt. and Western Rhodopes Mts. adding that the flies were found on flowers, partly even in large numbers. *T. longipes* is reported <sup>[3]</sup> from Bulgaria and Romania.

***Thricops nigrifrons*** (Robineau-Desvoidy, 1830): Material examined: 2♂3♀ Rila Mts., x. Musala, 29.07.1936, P. Drenski; 7♀ Rila Mts., Solenere - Sitnyakovo, 04.08.1936, 2♂ Stara Planina, hut Morgash, 1.500 m, 19.06.1950, P. Drenski; 1♀ Stara Planina Mts., 21.07.1961, V. L.; 1♀ Rodopi Mts., Smollansko Stolkite, 08.08.1963, V. L.; 1♂ Primorsko, 10.07.1965, V. L.; 2♂ Rodopi Mts., Smollansko Stolkite, 26.07.1965, V. L.; 2♂ Rodopi Mts., Studenez, 28.07.1965, V. L., det. V. L.; 2♀ Rodopi Mts., Pamporovo, 28.07.1965, V. L.; 1♂1♀ Rodopi Mts., Rojen, 28.07.1965, V. L.; 1♂ Rodopi Mts., Kara bair, 29.07.1965, V. L., det. V. L.; 3♀ Rodopi Mts., x. Persenk, 30.07.1965, V. L.; 1♀ Pirin Mts., Popina laka, 1.300 m, 13.07.1966, V. L.; 1♂ Pirin Mts., Begovitsa, 13.07.1966, V. L.; 1♀ Rodopi Mts., Yndola, 26.07.1966, V. L.; 1♂ Pirin Mts., Popina laka, 1.300 m, 29.07.1966, V. L.; 5♂1♀ Pirin Mts., Predel Pass, 12.06.1967, V. L.; 1♀ Rila Mts., Preslapa peak, 444 m, 12.07.1967, N. Atanasov; 1♂ Sleven distr., mountain near Sleven, 02.06.1968, V. L., det. V. L.; 6♂4♀ Tvardishka Mts., Sheshkingrad, 03.06.1968, V. L., det. V. L.; 1♂ Elena Mts., Trapliska river, 800 m, 05.06.1968, V. L.; 18♂ Elena Mts., forest, 06.06.1968, V. L.; 2♂ Rodopi Mts., Eleschniza, 18.08.1968, V. L.; 1♂ Tvardishka Mts., Sheshkingrad, 03.08.1968, V. L.; 15♂6♀ Rodopi Mts., Pamporovo, 24.06.1969, V. L.; 1♀ Rodopi Mts., Studenez, 24.06.1969, V. L., det. V. L.; 1♂ Rodopi Mts., Trigrad, 25.06.1969, V. L.; 1♂ Rodopi Mts., Smollanski Ezera, 25.06.1969, V. L., det. V. L.; 2♀ Rodopi Mts., Siutka, 25.07.1969, V. L.; 1♂ Rodopi Mts., Smollanski Ezera, 31.07.1969, V. L., det. V. L.; 3♂3♀ Rodopi Mts., Trigrad Tschaira, 24.06.1970, V. L.; 1♀ Stara Planina Mts., 3km N Kalof Town, Panisite, 18.08.1969, V. L.,

det. V. L.; 7♂20♀ Sofia distr., Dragalevtzi, 26.07.1970, V. L.; 1♀ Rila Mts., NW Parangalitsa Reserve (42°02'38" N; 23°23'22" E), 1.710 m, 11.08.2015, T. Ljubomirov. NMNHS: 1♂ Sofia distr., Gintzi, 29.06.1939, P. Drenski.

The species is mentioned <sup>[9]</sup> from Rila Mts. and Stara Planina without further details about sites. According to Fauna Europaea <sup>[3]</sup> *T. nigrifrons* is known in South Eastern Europe only from Bulgaria and Romania.

***Thricops nigrifrons*** (Zetterstedt, 1838): Material examined: 1♂ Rila Mts., Tcham Kuria, 15.-25.07.1921, Dr. I. Buresch; 18♂85♀ Rila Mts., x. Musala, 29.07.1936, P. Drenski; 4♂7♀ Rodopi Mts., N of Siutka peak, forest, 25.07.1964, V. L.; 1♀ Rodopi Mts., x. Persenk, 30.07.1965, V. L.; 3♂4♀ Rodopi Mts., Pamporovo, 24.06.1969, V. L.; 2♀ Rodopi Mts., Studenez, 24.06.1969, V. L.; 1♂ Rodopi Mts., Trigrad, 25.06.1969, V. L.; 1♀ Rodopi Mts., Siutka, 25.07.1969, V. L.; 7♂ Stara Planina, near to Vezhen hut, 22.06.1972, V. L., det. V. L.; 2♀ Vitosha Mts. (27), 2.200-2.250 m, 17.07.1976, V. Guèorguiev, det. V. L.; 4♂4♀ Vitosha Mts. (33), 2.130 m, 08.07.1977, V. Guèorguiev, det. V. L.; 4♂4♀ Vitosha Mts. (34), 2.210-2.220 m, 08.07.1977, V. Guèorguiev, det. V. L.; 1♂1♀ Vitosha Mts. Stenata, 16.07.1991, leg. & det. E. Kozuharova. NMNHS: 2♂8♀ Rila Mts., Tcham Kuria, 17.08.1935, P. Drenski; 1♀ Vitosha Mts. hut Aleko, 1.800 m, 13.08.1948, P. Drenski.

The species has been studied as pollinator of flowers in the mountains of Bulgaria <sup>[9]</sup> and it is reported in the catalogue <sup>[9]</sup> from Central Stara Planina - hut Vejen 22.06.1972, as listed in the compilation above, and it is also mentioned without further details from Pirin Mts., Rila Mts. and Vitosha Mts.

***Thricops semicinereus*** (Wiedemann, 1817): Material examined: 1♀ Rodopi Mts., W of Rakitovo, 1.000 m, 31.07.1951, P. Drenski; 2♀ Rodopi Mts., V. Kolarov, 25.08.1967, V. L.; 3♂ Tvardishka Mts., Sheshkingrad, 03.06.1968, V. L., det. V. L.; 1♀ Rodopi Mts., Dubovez, 18.06.1969, V. L., det. V. L.; 1♂ Rodopi Mts., Pamporovo, 24.06.1969, V. L.; 2♂ Rodopi Mts., Smollanski Ezera 25.06.1969, V. L.; 2♀ Vitosha, 03.09.1991, leg. & det. E. Kozuharova; 1♀ Vitosha, 04.09.1991, leg. & det. E. Kozuharova; 2♀ Vitosha, 06.09.1991, leg. & det. E. Kozuharova. NMNHS: ; 1♀ Rila Mts., Tcham Kuria, 15.-30.08.1920, Dr. I. Buresch; 5♀ Rila Mts., Tcham Kuria, 15.-15.07.1921, Dr. I. Buresch; 1♀ Vitosha Mts., hut Aleko, 1.800 m, 13.08.1948.

The species was also confirmed as pollinator by Kozuharova <sup>[9]</sup>. Two sites are listed<sup>[9]</sup>, Western Stara Planina - peak Kom, 11.07.1963, 1♀; and Vitosha Mts. 15.09.1991; in addition Western Rhodopes Mts. - near to town Smolyan - on flowers and Eastern Rhodopes Mts. - near the town Kurdjali - on vegetation are mentioned.

***Thricops simplex*** (Wiedemann, 1817): Material examined: 1♂ Bel. v. Kom, 11.07.1963, V. L.; 1♀ W. Stara Planina, m. Lekla, 20.09.1963, V. L.; 2♂4♀ Vitosha Mts., 1.300 m, 26.8.1964, V. L.; 1♀ Rakovischky m-r, 17.09.1964, V. L.; 1♀ Rila Mts., Rila monastery, 27.10.1965, V. L.; 1♀ Gubesch, 18.05.1966, V. L.; 2♂ Bilata Voda, 13.08.1966, V. L.; 1♂ W. Stara Planina, Sv. Nikola, 14.08.1966, V. L.; 1♀ W. Balkan, Berkovitsa, 25.10.1966, V. L.; 1♂15♀ NE of Rila monastery, 03.09.1967, M. Witanova; 1♂15♀ Zheravna vill. under Rosbyena peak, June 1968, V. L.; 6♀ under Botev peak, 18.08.1969, V. L., det. V. L.; 1♂ Stara Planina, nr. Kalof town

S of Botev peak, 1.400 m, 18.08.1969, V. L., det. V. L.; 1 ♀ Stara Planina., Hotel Razboina, 800 m., 24.08.1964 V. L.; 1 ♂ 3 ♀ Stara Planina, Rozbyena, 800 m, 24.08.1969, V. L.; 1 ♀ Sofia, 14.05.1976, V. L.; 1 ♀ Rodopi Mts., Rakitovo, way up to Siutka peak (41°53'20"N24°03'52"E), 17.08.2016, E. Zielke.

Pirin Mts., Stara Planina near the towns Shoumen and Dobrich and Stargach Planina are listed <sup>[9]</sup> as areas where *T. simplex* was collected. Lavčiev also reported that "the species was found most often on human excrements".

***Thricops sudeticus*** (Schnabl, 1888): Material examined: 2 ♀ Rila monastery to Rilska river, 26.10.1965, V. L.; 1 ♀ W. Balkan, Berkovitsa, 25.10.1966, V. L.; 1 ♂ Rila Mts., Cemkovo, 1.800 m, 16.06.1968, V. L.; 1 ♂ Vitosha Mts. (V29), 2.100-2.250 m, V. Guèorguiev, det V. L.

One of the two females from Rila Monastery 26.10.1965 was marked with two species-labels, still using the earlier name *Alleostylus* for *Thricops*. One was reading "*Alleost. albibasalis*" and the other "*Alleostylus sudeticus*". The handwriting on both labels is very similar.

Lavčiev <sup>[9]</sup> reported following sites from Bulgaria: "Western Stara Planina Mts. - near the town Berkovitsa, 26.10.1965, 1 ♀; Western Rhodopes Mts. - on the foot of peak Perelik, 9.07.1963, 1 ♀; on the foot of peak Siutka, 14.08.1963, 1 ♀." The females were not found among the examined material. The species is recorded <sup>[3]</sup> from Bulgaria and Serbia.

#### **Additional Azeliinae reported from Bulgaria**

The following species were primarily reported by Lavčiev <sup>[9]</sup> in Catalogus Faunae Bulgaricae and/or were assigned in Fauna Europaea <sup>[3]</sup> to Bulgaria. There was no specimen of one of these species in any of the three collections screened for Azeliinae.

***Azelia atterima*** (Meigen, 1826): Lavčiev reported <sup>[9]</sup> the species from one site in Bulgaria only, Sredna gora Mt. - around Kanzanluk, 13.06.1968, 2 ♀. The species is not listed for Bulgaria and the Balkan Peninsula <sup>[3]</sup>.

***Azelia gibbera*** (Meigen, 1826): Lavčiev <sup>[9]</sup> did not mention *A. gibbera*, but Fauna Europaea <sup>[3]</sup> reported the species from Bulgaria and Romania.

***Azelia monodactyla*** Loew, 1874: The species is not mentioned in the catalogue <sup>[9]</sup> of the Bulgarian muscids, but Gregor *et al.* <sup>[20]</sup> and Fauna Europaea <sup>[3]</sup> reported it from Bulgaria.

***Drymeia cinerea*** Meigen, 1826: The species was reported <sup>[9]</sup> from Western Rhodopes Mts. - near the site Cudnite mostove, near town Dospat, 11.05.1963, 1 ♀. Apart Bulgaria it is not recorded <sup>[3]</sup> from any other country of the Balkan Peninsula and Eastern Europe.

***Drymeia fasciculata*** (Stein, 1916): The species is listed <sup>[9]</sup> from three sites of Bulgaria; Vitosha Mt. - near the hut Sredets, 4.06.1954, 1 ♀; near hut Aleko, 9.07.1954, 2 ♂; Rila Mts. - near hut Maliovitsa, 15.05.1950, 1 ♀. According to Fauna Europaea <sup>[3]</sup> *D. fasciculata* is only known from France, Italy, Bulgaria and with some doubt from Austria.

***Potamia littoralis*** Robineau-Desvoidy, 1830: The species is reported only by Fauna Europaea <sup>[3]</sup> for Bulgaria, there are no records of the species for the other Balkan countries.

***Thricops bukowskii*** (Ringdahl, 1934): The species is reported <sup>[9]</sup> of Bulgaria from Stara Planina - near hut Bialata Voda, 21.05.1966, 1 ♂; and Central Stara Planina - near hut Bukovets, 26.06.1972, 1 ♀. Both specimens were found on vegetation of meadows. The species is known <sup>[3]</sup> only from Albania, Ukraine and Bulgaria.

***Thricops culminum*** (Pokorny, 1889): The species is reported only by Fauna Europaea <sup>[3]</sup> for Bulgaria, there are no records of the species for other Balkan countries.

***Thricops furcatus*** (Stein, 1916): The species is reported from Bulgaria only by Lavčiev <sup>[9]</sup> based on one female collected at Pirin Mts. -above the town Bansko, 11.07.1969.

#### **Discussion**

The distribution records of Phaoniinae and Mydaeinae from Bulgaria have been summarized in previous contributions <sup>[11, 21, 22]</sup>. The present update of the distribution records of the Azeliinae-genera in Bulgaria - with the exception of the genus *Hydrotaea*- revealed a total of 32 species, of which 23 were found among the examined material collected in the last 110 years. The other nine species were not found in the collections screened for Azeliinae, but they have been included in the compilation since they were reported from Bulgaria in literature <sup>[9, 20]</sup> or by Fauna Europaea <sup>[3]</sup>. However, the reliability of this information remains doubtful unless the report is substantiated by the availability of a specimen of the species from the country. Unfortunately many records just contain the name of the species without any further information on number of specimens, gender, site, date and collector and in particular who identified the material. As recently shown <sup>[23]</sup>, this way of recording can lead to incorrect information about the distribution, which will be detected only by chance.

Four species identified from the material are new records to the country, *Thricops beckeri* is also first reported by the Balkan Peninsula and was previously unknown from Eastern and South-eastern Europe. From the total of 32 species known now from Bulgaria fifteen species belong to the genus *Thricops*, six to *Azelia*, five to *Drymeia*, four to *Muscina* and one each to *Potamia* and *Achanthiptera*.

The occurrence of the examined Azeliinae species in Greece, Romania and Serbia, countries adjacent to Bulgaria, is shown in Table 1 for comparison. Unfortunately very little information was found on muscid fauna of two other countries, bordering Bulgaria, namely Macedonia and the European part of Turkey. Only *Muscina stabulans* and *Muscina levida* are recorded by Fauna Europea from Macedonia and no reports were found for the European part of Turkey. Of the species newly recorded from Bulgaria only *Azelia nebulosa* was already recorded from Greece and Romania, *Achanthiptera rohrelliformis* and *Thricops diaphanus* were known from Romania. In general, the Azeliinae seem to be well represented in Romania and Bulgaria, but they appear still underrepresented in Serbia and Greece.

**Table 1:** Species of Azeliinae reported from Bulgaria (BG), Greece (GR), Romania (RO) and Serbia (SE) either by Pont<sup>[3]</sup> or Lavčiev<sup>[7]</sup> in comparison with the present update (BG 2019).

	BG 2019	BG Lavčiev	BG Pont	GR Pont	RO Pont	SE Pont
<i>Achanthiptera</i> Rondani, 1856						
<i>A. rohrelliformis</i> (Rob.-Desv., 1830)	+				+	
<i>Azelia</i> Robineau-Desvoidy, 1830						
<i>A. aterrima</i> (Meigen, 1826)		+			+	
<i>A. cilipes</i> (Haliday, 1838)	+	+			+	+
<i>A. gibbera</i> (Meigen, 1826)			+		+	
<i>A. monodactyla</i> Loew, 1874			+		+	
<i>A. nebulosa</i> Rob.-Desv., 1830	+			+	+	+
<i>A. parva</i> Rondani, 1866					+	
<i>A. triquetra</i> (Wiedemann, 1817)	+	+	+		+	
<i>A. zetterstedtii</i> Rondani, 1866					+	+
<i>Drymeia</i> Meigen, 1826						
<i>D. alpicola</i> (Rondani, 1870)	+	+	+			
<i>D. cinerea</i> (Meigen, 1826)			+			
<i>D. fasciculata</i> (Stein, 1916)		+	+			
<i>D. hamata</i> (Fallén, 1825)	+		+		+	
<i>D. tetra</i> (Meigen, 1826)					+	
<i>D. vicana</i> (Harris, 1780)	+	+	+	+	+	+
<i>Muscina</i> Robineau-Desvoidy, 1830						
<i>M. levida</i> (Harris, 1870)	+	+	+	+	+	+
<i>M. n. sp.</i> Zielke					+[ <sup>a</sup> ]	
<i>M. pascuorum</i> (Meigen, 1826)	+	+	+	+	+	
<i>M. prolapsa</i> (Harris, 1780)	+	+	+	+	+	+
<i>M. stabulans</i> (Fallén, 1817)	+	+	+	+	+	+
<i>Potamia</i> Robineau-Desvoidy, 1830						
<i>P. littoralis</i> Rob.-Desv., 1830			+			
<i>Thricops</i> Rondani, 1856						
<i>T. aculeipes</i> (Zetterstedt, 1838)	+	+	+		+	
<i>T. beckeri</i> (Pokorny, 1893)	+					
<i>T. bukowskii</i> (Ringdahl, 1934)		+	+			
<i>T. culminum</i> (Pokorny, 1889)			+			
<i>T. cunctans</i> (Meigen, 1826)	+	+	+		+	
<i>T. diaphanus</i> (Wiedemann, 1817)	+				+	
<i>T. furcatus</i> (Stein, 1916)		+				
<i>T. genarum</i> (Zetterstedt, 1838)	+	+	+			+
<i>T. inocuus</i> (Zetterstedt, 1838)	+	+	+(?)			
<i>T. lividiventris</i> (Zetterstedt, 1845)					+	
<i>T. longipes</i> (Zetterstedt, 1845)	+	+	+		+	
<i>T. nigrifrons</i> (Rob.-Desv., 1830)	+	+	+		+	
<i>T. nigritellus</i> (Zetterstedt, 1838)	+	+	+		+	+
<i>T. semicinereus</i> (Wiedemann, 1817)	+	+	+	+	+	
<i>T. simplex</i> (Wiedemann, 1817)	+	+	+	+	+	
<i>T. sudeticus</i> (Schnabl, 1888)	+	+	+			+
	23	22	25	8	26	10

[<sup>a</sup>] = The new *Muscina* species has been added to the list of Azeliinae from Romania summarized from data of Fauna Europaea<sup>[3]</sup>.

Among the material studied, *Thricops nigritellus* was the most frequently identified species with 160 specimens. But *T. nigritellus* is not the most common species, males and females were collected at 15 different days and at 12 different sites only. The large number of specimens can be explained by a collection of more than a hundred specimens of the species in the Rila Mountains on 29.7.1936 by P. Drenski. The most common species were *Muscina levida* with 144 flies captured on 59 different dates and in 47 different localities and *M. stabulans* (131 flies/66 different days/ 41 different sites), followed by *Thricops nigrifrons* (129/34/30), *T. longipes* (128/30/24) and *T. cunctans* (103/29/18). More than 20 specimens per species were found from *Drymeia vicana* (63/28/24), *T. simplex* (61/17/17), *M. prolapsa* (59/37/25), *D. alpicola* (40/6/6), *T. genarum* (24/9/6) and *T. semicinereus* (22/14/11). Fewer specimens were found of all the other listed species. Of three species only one specimen was identified,

although there have been many collecting activities in a variety of biotopes in Bulgaria over the period of the last century.

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