

The Dipterans (Insecta: Diptera) of the Vitosha Mountain

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Abstract. A total of 1272 two-winged species that belong to 58 families has been reported from the Vitosha Mt. The Tachinidae (208 species or 16.3%) and Cecidomyiidae (138 species or 10.8%) are the most numerous. The greatest number of species has been found in the mesophytic and xeromesophytic mixed forests belt (707 species or 55.6%) and in the northern part of the mountain (645 species or 50.7%). The established species belong to 83 areographical categories. The dipterous fauna can be divided into two main groups: 1) species with Mediterranean type of distribution (53 species or 4.2%) – more thermophilic and distributed mainly in the southern parts of the Palaearctic; seven species of southern type, distributed in the Palaearctic and beyond it, can be formally related to this group as well; 2) species with Palaearctic and Eurosiberian type of distribution (1219 species or 95.8%) – more cold-resistant and widely distributed in the Palaearctic; 247 species of northern type, distributed in the Palaearctic and beyond it, can be formally related to this group as well. The endemic species are 15 (1.2%). The distribution of the species according to the zoogeographical categories in the vegetation belts and the distribution of the zoogeographical categories in each belt are considered. The dipteran fauna of the Vitosha Mt. is compared to this of the Rila and Pirin Mountains.

Key words: Diptera, Bulgaria, Vitosha Mt., faunistic composition, zoogeographical characteristics

Introduction

The accumulated knowledge of the animal world and the large number of studies on the Vitosha Mt. are related to the proximity of the capital of Sofia, the largest and old natural science centers in the country, the good attendance by foreign and Bulgarian zoologists and its popularity as a tourist site. The long-standing research on the fauna of the mountain and its surroundings allows Vitosha Mt. to be considered the best-studied Bulgarian mountain.

The studies on Diptera of the Vitosha Mt. began 112 years ago. The first data were reported by Kovachev (1905), Nedelkov (1910, 1912) and Vimmer (1916). Between the two world wars the works of Komarek & Vimmer (1921, 1922, 1934), Enderlein (1924, 1936), Konsuloff & Paspalev (1925), Tschorbadjiew (1925, 1933), Drensky (1929, 1931, 1934, 1939a, 1939b, 1943), Szilady (1934), Zilahi (1934), Dimitrov (1935), Jacentkovsky (1936, 1937, 1939), Drenowsky (1937, 1939) and Buhr (1941) were published. After the World War II, the first work about Vitosha Mt., was published by Buresch (1953). Then significant number of articles related to dipterans of the Vitosha Mt., including ap-

plied entomological works as well, were published (Mannheims 1954; Buresch & Lazarov 1956; Drensky 1957, 1958; Moucha & Chvala 1961; Naidenov 1962; Bankowska 1964, 1967a, 1967b; Hradsky & Moucha 1964, 1967; Lavčiev 1964a, 1964b, 1965a, 1965b, 1966, 2003; Lavčiev & Nestorova 1967; Beshovski 1977a, 1978, 1982, 1984, 1985, 1994, 1995, 1998a, 1898b, 2001, 2004a, 2008, 2009, 2012, 2013a, 2013b; Chvála 1977, 1983; Hubenov 1977, 1980, 1982, 1983, 1990; Lavčiev et al., 1977; Lehrer 1977; Beiger 1979; Trenchev 1980a, 1980b, 1980c, 1980d; Krzeminski 1984; Mendl 1986; Dimitrova 1987, 1990, 1992; Krzeminski & Stary 1989; Michailova 1989; Ziegler 1989; Beshovski & Dimitrova 1990; Povolný & Verves 1990; Bheschovski & Minkova 1991; Božkov 1991; Skuhrava et al. 1991; Mamaev & Dimitrova 1992, 1998; Mohrig Dimitrova 1992, 1993; Mohrig et al. 1992; Dimitrova & Mamaev 1993; Dimitrova & Mohrig 1993; Stary & Krzeminski 1993; Beshovski et al. 1995; Dzhambazov 1995; Beschovski & Manassieva 1995; Beshovski & Langourov 1997; Hollmann-Schirrmacher 1998; Beshovski & Zatwarnicki 2000, 2001a, 2001b, 2002, 2004;

Černý & Merz 2006; Langourov 2009; Bechev 2010; Zaemdzhikova 2012, 2015; Doychev et al. 2016; Zielke 2016). Hydrobiological (Valkanov 1941; Arndt 1943; Russev 1961; Dimitrov 1963; Kovachev 1973, 1976, 1990) and biospeleological (Hazelton 1970; Beron 1994, 2006, 2015; Langourov 2001b; Langourov et al. 2014) studies have a faunistic contribution.

Some of the faunistic data are reports that are not related to Vitosha Mt. and concern separated groups of dipterans. The previous Vitosha Nature Park management plan (2005-2014) includes 13 species of rare dipterans. In the current management plan (2014-2024), Diptera is not considered. There are more systematic studies on the families of Sciaridae, Simuliidae, Syrphidae, Chloropidae, Muscidae and Tachinidae. The most complete are the studies on Cecidomyiidae (Dimitrova 1989) and Phoridae (Langurov 2001a), which are dissertation works. Review papers on the dipteran fauna of the Vitosha Mt. are lacking.

The aim of the work is to present the fauna, distribution, distribution according to the vegetation belts, zoogeography and study on Diptera of the Vitosha Mt.

Materials and Methods

Vitosha Mt. is situated in the South-West Bulgaria and belongs to the Plana-Zavalska Mountain range of the Kraishte-Srednogorie District (Ivanov 1966, Vulkov et al. 1986, Kovachki & Petrushev 2007, Nikolov et al. 2013, Stoyanov 2014). It is surrounded by the Sofia (550 m a.s.l.), Pernik (750 m a.s.l.) and Samokov (950 m a.s.l.) Basins and the Lozenska, Plana, Verila, Golo Bardo and Lyulin Mountains. To the north and north-east the border of the Vitosha Mt. runs along the Vladayska River, the horizontals of 800 m a.s.l. above Knyazhevo and Boyana and 900-950 m a.s.l. above Dragalevtsi and Simeonovo, crossing the Bistritsa Village. To the east and south-east it follows the 1050 m a.s.l. horizontal, passes over the Zheleznitsa Village, through the Egulo-Palakariya Col (1195 m a.s.l.) and along the 1100 m a.s.l. horizontal reaches above Yarlovo Village. To the south and south-west the border runs south of the Boga Glava Peak, through the Buko-Preslap Col (1090 m a.s.l.), follows the Dobri Dol River, the Klisurata River, crosses the Bosnek Col (935 m a.s.l.), reaches the Struma River near the Bosnek Village and continues to the Studena Reservoir. To the west and north-west it crosses the Matnitsa River

between the horizontals 800-850 m a.s.l., runs west from the villages of Kladnitsa, Rudartsi and Marchaevo and through the Vladaya Col (860 m a.s.l.) reaches the Vladaya River near the Vladaya Village (Georgiev & Ugarov 1958, Yordanov 1977, Chucheva et al. 1983, Yosifov 1983, Kovachki & Petrushev 2007, Nikolov et al. 2013, Stoyanov 2014). The distance between the most northern and the most southern points of the Vitosha Mt. is 23 km, and between the most western and the most eastern points – 19 km. The average altitude of the mountain is 1500 m a.s.l., the lowest parts are above the Knyazhevo and Boyana neighborhoods (about 800 m a.s.l.), and the highest parts – at Cherni Vrah Peak (2290 m a.s.l.). The total area of the Vitosha Mt. is 278 km² – 0.25% of the Bulgarian territory (Mishev 1969, Minchev et al., 1980, Nikolov et al. 2013).

Vitosha Mt. is divided into four parts: **North** (Kamendelski) – between the valleys of the Vladayska and Dalboka Rivers; **East** (Kupenski) – between the Dalboka and Kurtova Rivers; **South** (Vetrensko-Bosneshki) – between the Kurtova and Matnitsa Rivers; **North-west** (Selimishki) – between the Matnitsa and Vladayska Rivers (Georgiev & Ugarov 1958; Georgiev 1960, 1965; Filizov et al. 1969; Boyadzhiev 1971; Yosifov 1983; Kovachki & Petrushev 2009; Nikolov et al. 2013; Stoyanov 2014). Vitosha Mt. represents a silicate massif consisting essentially of syenites. In the Bosnek section of the southern part (composed of carbonate rocks) karst forms are developed. The mountain belongs to the European Continental climatic region and the territory over 1000 m a.s.l. is included in the Mountain climatic region. According to the climatic vertical gradient three climatic zones are outlined (Sabev & Stanev 1959; Hristov 1959; Tichkov 1976, 1982; Stanev 1991; Stoyanov 2014). Vitosha Mt. has significant water resources – springs, fens, streams and rivers. The mountain belongs to the Illyrian Province of the European deciduous forest area. The vegetation is differentiated in a system of four vegetation zones (Bondev et al. 1973; Bondev 1982, 1991, 1997, 2002; Velchev et al. 1982, 1989; Velchev 1997, 2002; Gachev 2014): 1) **Xeromesophytic and mesophytic mixed (oak-hornbeam) forests** (it is lacking in the eastern part) – up to 1100-1400 m a.s.l. (average 1270 m a.s.l.); 2) **Beech forests** – up to 1400-1840 m a.s.l. (average 1650 m a.s.l.); 3) **Coniferous forests** (it is

lacking in the southern part) – up to 1700–2050 m a.s.l. (average to 1870 m a.s.l.); 4) **Subalpine vegetation** – above the upper boundary of the forest (above 1900 m a.s.l.). Under the human impact the natural boundaries between these belts are destroyed. Vitosha Mt. belongs to the Rila-Rhodope Zoogeographical Region and has an Eurosiberian faunistic character (Georgiev 1982, 2002). The mountain is rich in endemics (148), relicts (85) and rare species (351) and includes about 28% of the known Bulgarian terrestrial species (Hubenov 2008, 2014).

The territory of the Vitosha Nature Park includes 270.79 km² with the reserves Bistrishko Branishte (10.61 km²) and Torfeno Branishte (7.83 km²). The mountain is a part of the European ecological network Natura 2000 – Vitosha protected area, where 32 types of natural habitats are protected (Gussev et al. 2005). The protected areas cover 97% of the total area of the mountain.

The material from the Vitosha Mt. has been collected after 1890 and is collected from 256 localities (Table 1). The main part of it is stored in the National Museum of Natural History and the Institute of Biodiversity and Ecosystem Research (the former Institute of Zoology). All species, reported from Vitosha Mt., are included. Some collectors did not give accurate localities and indicated only the Vitosha Mt. (for 366 species, of which 236 are single reports). In some hydrobiological works (Kovachev 1990) the localities are presented too generalized (for the whole mountain). For a number of widespread and numerous species the authors did not give the localities and mentioned they occur everywhere. Such species are included in the review only if they are reported from the Vitosha Mt. A number of foreign entomologists have published materials from Bulgaria, containing data about Vitosha Mt.

For each species are given: a recent scientific name, distribution on the territory of the Vitosha Mt., altitude at which it is established, the vegetation belts it inhabits parts of the mountain in which it is found, areogeographical characteristics and references (Table 3). To compare the fauna in the different parts of the mountain, Czekanowski-Dice-Sörensen coefficient of similarity was used. The classification of the areas is based on the works of Kryzhanovsky (1965, 1976, 2002), de Lattin (1967), Malicky et al. (1983), Gorodkov (1984)

and Vigna Taglianti et al. (1999)¹. The areogeographical categorisation of the species is based on the available literature and recent electronic issues. Zoogeographical analysis for the species categorisation was used. This method allows obtaining data information about species complexes with different zoogeographical character based on the published data regarding species distribution and results of the faunistic research. These complexes contain zoogeographical information about the taxonomic groups which, combined with the origin of the ranges, determines the zoogeographical character of the fauna. The distribution of the species according to the zoogeographical categories in the different vegetation belts and the distribution of the zoogeographical categories in each belt are scrutinised (Table 4). The dipteran fauna is compared to that of the Pirin and Rila Mountains (Tables 2, 4).

Abbreviations used: • – presence of the species in the corresponding vegetation belt, ♦ – presence of the species in the corresponding part of the Vitosha Mt., ? – uncertain data or lack of data, +++ – species, reported for the first time and localities, from which species are reported for the first time, **am** – Arctomontane, **atm** – Afro-tropical-Mediterranean, **ba** – Boreoalpine, **ban** – Balkan-Anatolian, **bm** – Boreomontane, **cee** – Central and East European, **cse** – Central and South European, **csean** – Central and South European-Anatolian, **csee** – Central and South-east European, **csean** – Central and South-east European-Anatolian, **cseeit** – Central and South-east European-Iran-Turanian, **cseel** – Central and South-east European-Lebanonian, **cseit** – Central and South European-Iran-Turanian, **csena** – Central and South European-North African, **des** – Disjunct Eurosiberian, **dp** – Disjunct Palaearctic, **dpo** – Disjunct Palaearctic-Oriental, **e** – European, **ean** – European-Anatolian, **eanit** – European-Anatolian-Iran-Turanian, **eanna** – European-Anatolian-North African, **Eb** – Balkan endemic, **Ebg** – Bulgarian endemic, **Ebs** – Balkan subendemic, **eca** – European-Central Asian, **ee** – East European, **eeca** – East European-Central Asian, **eit** – European-Iran-Turanian, **em** – East Mediterranean, **ena** – European-North African, **Er** – Regional endemic, **esanca** – Eurosiberian-Anatolian-Central Asian, **esca** – Eurosiberian-Central Asian, **ess** – European and South Siberian, **eswa** – European-South-west Asian, **et** – European-Turanian, **ewca** – European-West Central Asian, **h** – Holarctic, **h*** – species introduced in North America, **ha** – Holarctic-Australian, **hat** – Holarctic-Afrotropical, **hata** – Holarctic-Afrotropical-Australian, **hn** – Holarctic-Neotropical, **hna** – Holarctic-Neotropical-Australian, **hnat** – Holarctic-Neotropical-Afrotropical, **hno** – Holarctic-Neotropical-Oriental, **ho** – Holarctic-Oriental, **hoa** – Holarctic-Oriental-Australian, **hoes** – Holoeuroasian, **hom** – Holomediterranean, **hop** – Holopalaearctic, **hpt** – Holarctic-Paleotropical, **hpta** – Holarctic-Paleotropical-Australian, **hptn** – Holarctic-Paleotropical-Neotropical, **i** – introduced species (immigrants),

¹ The inversion of the nomenclature of the ranges and the border between the West and East Palaearctic along the Ural Mts. of Vigna Taglianti et al. (1999) was not followed. The traditional nomenclature and the border between the West and East Palaearctic along the Yenisey River was used.

k – Cosmopolitan, **m** – montane, **mca** – Mediterranean-Central Asian, **mit** – Mediterranean-Iran-Turanian, **mm** – montane-Mediterranean, **mss** – Mediterranean and South Siberian, **msws** – Mediterranean and South-west Siberian, **mt** – Mediterranean-Turanian, **mwca** – Mediterranean-West Central Asian, **nemit** – North-east Mediterranean-Iran-Turanian, **nm** – North Mediterranean, **nmca** – North Mediterranean-Central Asian, **nmt** – North Mediterranean-Turanian, **om** – Oriental-Mediterranean, **pa** – Palaearctic-Australian, **pat** – Palaearctic-Afrotropical, **pata** – Palaearctic-Afrotropical-Australian, **po** – Palaearctic-Oriental, **poa** – Palaearctic-Oriental-Australian, **ppt** – Palaearctic-Paleotropical, **ppta** – Palaearctic-Paleotropical-Australian, **ptm** – Paleotropical-Mediterranean, **se** – South European, **see** – South-east European, **seen** – South-east European-Anatolian, **seena** – South-east European-North African, **sena** – South European-North African, **sess** – South European and South Siberian, **sk** – Semicosmopolitan, **sp** – South Palaearctic, **spat** – South Palaearctic-Afrotropical, **spo** – South Palaearctic-Oriental, **sppt** – South Palaearctic-Paleotropical, **sppa** – South Palaearctic-Paleotropical-Australian, **tp** – Transpalaearctic, **wces** – West and Central Eurosiberian, **wcp** – West and Central Palaeartic, **wes** – West Eurosiberian, **wesan** – West Eurosiberian-Anatolian, **wesanca** – West Eurosiberian-Anatolian-Central Asian, **wesant** – West Eurosiberian-Anatolian-Turanian, **wesca** – West Eurosiberian-Central Asian, **wesit** – West Eurosiberian-Iran-Turanian, **west** – West Eurosiberian-Turanian, **weswca** – West Eurosiberian-West Central Asian, **wp** – West Palaearctic, **wpat** – West Palaearctic-Afrotropical, **wpn** – West Palaearctic-Neotropical, **wpo** – West Palaearctic-Oriental.

Results and Discussion

A total of 1272 dipteran species belonging to 58 families has been established in the Vitosha Mt. so far (Tables 2 and 3). The family Tachinidae is the most numerous with 208 species, followed by Cecidomyiidae – 138, Syrphidae – 130, Chloropidae – 79 and Muscidae – 53. The remaining families contain from 1 to 50 species. The number of species found in the Vitosha Mt. represents 31.8% of the known Diptera from Bulgaria (about 4000 species) and includes 55–65% of the real species composition of the mountain. The dipterans are a highly mobile group and after further exploration of the Vitosha Mt., about 2400 species are expected to be found or 60% of the species composition of most families found in the country. Of the 63 families known from the Rila and Pirin Mountains in total, 18 families have not been established in the Vitosha Mt. (Table 2). At the same time, 13 of the families found in the Vitosha Mt., have not been established in the Rila or Pirin Mountains. A total of 76 families has been established in the three mountains [70.4% of the families of the order of Diptera (108 families) known from Bulgaria] and 1986 species were common.

The large number of localities (256) compared to Rila (160) and Pirin (77) Mountains and the smaller area of the Vitosha Mt. gives the impression of an

even study of the territory of the mountain. This can be accepted for the families of Cecidomyiidae and Phoridae which have been a subject of dissertation works. For the remaining families the taxa distribution is connected with the extent to which the corresponding mountain region has been studied and has no systematic character. This is evident when comparing the established species with regard to localities (Table 1). Four areas of detailed research (over 70 species found) are outlined. First are the surroundings of Knyazhevo (81 species) and Dragalevtsi (75 species) – the most visited places in the mountain. The large number of species known from the region of Bosnek Village (73 species) and Kirova Livada Meadow (72 species) are due to the five better studied families (Sciariidae, Cecidomyiidae, Phoridae, Chloropidae and Tachinidae). Regarding the other parts of the mountain, the surroundings of Boyana and Simeonovo and the Vladaya, Bistritsa and Zhelezniitsa Villages (from 35 to 68 species) are better studied. Of the inner parts of the mountain, the surroundings of the Aleko Chalet, Golyamata Gramada, Kopitoto Peak and Zlatni Mostove (from 48 to 56 species) are better studied. It is seen that the localities from which the most material is collected, are concentrated around the popular starting points for entering the Vitosha Mt. (except for Bosnek Village) and the main tourist centers or routes. In contrast to the Rila and Pirin Mountains, where significant areas have not been studied (Hubenov 2015b, 2016), there are no unexplored territories in the Vitosha Mt., from which a material (even single specimens) has not been collected.

The different parts of the mountain are differently studied (Table 2). The Kamen Del part (645 species or 50.8%) and Kupenski part (500 species or 39.3%) are the best studied. These parts (the north and east ones) are the most visited. The lowest number of species (with the exception of the families Limoniidae, Cecidomyiidae, Empididae, Chloropidae and Ephydriidae) is found in the Selimitsa part (184 species or 14.5%). Most families are not reported from this (north-western) part. In the well-studied families, the differences in the species composition of the parts are not big. The Vetren-Bosnek (southern) part of the Vitosha Mt. is the most poorly studied (296 species or 23.3%). It occupies the largest part of the mountain, includes the Bosnek karst area and most habitats. The visits in this part are located mainly around the villages of Bosnek and Chuypetlovo. Further investigations of the Vitosha Mt. could lead to

Table 1. Localities of Diptera from the Vitosha Mt.

Localities	Altitude (m)	GPS Navigation ($^{\circ}$ N, $^{\circ}$ E)	UTM Kode	Number of species
1. Akademik Cave (near Bosnek Village)	954	42°29'33.94"; 23°11'16.35"	FN70	5
2. Akademik Chalet (below the chalet)	1550	42°32'45.80"; 23°19'52.83"	FN91	11
3. Akademik Chalet (below the chalet)	1650	42°32'45.03"; 23°19'34.06"	FN81, FN91	6
4. Akademik (Fizkulturnik) Chalet	1830-1847	42°32'52.26"; 23°19'07.64"	FN81	19
5. Akademik Chelter	2240	42°33'25.18"; 23°17'10.85"	FN81	2
6. Aleko Chalet, surroundings	1810-1840	42°34'56.66"; 23°17'31.91"	FN81	48
7. Aleko Chalet (above the chalet)	1900	42°34'55.12"; 23°17'14.59"	FN81	54
8. Aleko Chalet (above the chalet)	2000	42°34'40.17"; 23°17'19.78"	FN81	4
9. At the foot of Vitosha Mt.	600-1000		FN82, FN91	12
10. Bay Krastyo area (above the area)	1600	42°36'11.68"; 23°17'53.49"	FN81	11
11. Bankov Rid Peak (below the peak)	1100	42°32'46.38"; 23°11'17.63"	FN81	3
12. Bankov Rid Peak (below the peak)	1160	42°32'49.75"; 23°11'40.37"	FN81	3
13. Bankov (Baykov) Rid Peak, surroundings	1183	42°32'44.14"; 23°11'37.99"	FN81	2
14. Belcheva Skala Peak	1833	42°31'40.59"; 23°18'54.24"	FN91	5
15. Belite Brezi Chalet	1330	42°37'06.50"; 23°13'39.80"	FN81	20
16. Bistrishka Reka River	750-2000		FN81, FN91	7
17. Bistrishko Branishte Reserve (near Bistrishka Reka River)	1400	42°35'02.68"; 23°18'46.43"	FN81, FN91	10
18. Bistrishko Branishte Reserve	1300-2277		FN81, FN91	9
19. Bistrishko Branishte Reserve	1400-1550	42°34'44.90"; 23°19'01.30"	FN81	8
20. Bistritsa Village	950-980	42°34'51.74"; 23°20'57.48"	FN91	55
21. Bistritsa Village	1000	42°35'16.94"; 23°20'54.66"	FN91	68
22. Bistritsa Village (near Selskata River)	1070	42°34'31.23"; 23°20'28.73"	FN91	9
23. Bistritsa Village (above the village)	1080	42°35'11.75"; 23°20'14.04"	FN91	7
24. Bistritsa Village (above the village)	1200	42°34'19.75"; 23°19'56.62"	FN91	22
25. Bistritsa Village (above the village)	1270	42°34'54.99"; 23°20'06.13"	FN91	51
26. Bistritsa Village (above the village near Bistrishka Reka River)	1270	42°34'12.81"; 23°19'38.93"	FN91	8
27. Bistritsa Village (above the village, Bistrishko Branishte Reserve)	1270-1400	42°34'46.58"; 23°19'43.10"	FN81, FN91	5
28. Bistritsa Village – Zhelezniitsa Village	1100-1200		FN91	23
29. Bor Chalet, surroundings	1600	42°37'05.16"; 23°15'24.32"	FN81	4
30. Borova Gora Chalet (Gorski Dom)	1700	42°36'05.78"; 23°15'09.10"	FN81	6
31. Bosnek Village (near Struma River)	920	42°29'45.26"; 23°10'18.50"	FN70	7
32. Bosnek Village	940	42°29'33.73"; 23°10'56.55"	FN70	73
33. Bosnek Village	950	42°29'43.25"; 23°11'05.10"	FN70	26
34. Bosnek Village (above the village)	1200	42°29'11.49"; 23°12'33.78"	FN80	5
35. Bosnek Village – Chuypetlovo Village	1120	42°29'58.44"; 23°14'08.91"	FN80	15
36. Bosochka (Bohotska) Reka River (near Kladnitsa Village)	1300	42°32'56.89"; 23°13'23.57"	FN81	1
37. Bosochka (Bohotska) Reka River	1650	42°33'38.17"; 23°14'04.38"	FN81	7
38. Boyana (? Boyanska Reka River)	700-1500		FN82	3
39. Boyana	750	42°38'43.46"; 23°16'03.71"	FN82	27
40. Boyana	770	42°38'44.21"; 23°15'49.57"	FN82	11
41. Boyana, surroundings	780-1000	42°38'23.61"; 23°16'00.28"	FN82	52
42. Boyana (above Boyana)	800-850	42°38'32.68"; 23°15'50.41"	FN82	40
43. Boyana (near Boyana)	850-870	42°38'29.23"; 23°15'57.22"	FN82	7

Table 1. Continued.

Localities	Altitude (m)	GPS Navigation (°N, °E)	UTM Kode	Number of species
44. Boyana (above Boyana)	1040	42°38'15.28"; 23°15'55.96"	FN82	3
45. Boyana (above Boyana)	1080	42°38'01.68"; 23°15'27.03"	FN82	2
46. Boyana (above Boyana)	1080-1470		FN82	1
47. Boyana Church	770	42°38'37.43"; 23°15'58.98"	FN82	9
48. Boyana Marsh (Boyansko Blatro Marsh)	680	42°39'21.97"; 23°15'30.70"	FN82	14
49. Boyana Waterfall (below the waterfall)	1000	42°38'09.15"; 23°15'32.43"	FN82	6
50. Boyana Waterfall (Boyanski Vodopad)	1350	42°37'44.92"; 23°15'11.91"	FN82	18
51. Boyanska Reka River	750-2100		FN81, FN82	1
52. Boyanski Kamak (cave above Boyanski Kamak near Boyana)	847	42°38'30.44"; 23°15'59.08"	FN82	1
53. Boyansko Ezero Lake (below the lake)	900	42°38'26.21"; 23°16'09.80"	FN82	2
54. Boyansko Ezero Lake, surroundings	1000-1200	42°38'09.32"; 23°16'09.92"	FN82	18
55. Boyansko Ezero Lake (above the lake)	1260	42°37'48.88"; 23°16'13.70"	FN82	11
56. Brezite area (near Brezovishki Dol River)	1000	42°31'12.54"; 23°22'48.86"	FN91	8
57. Brezite area (below the area)	1100	42°31'35.22"; 23°22'04.53"	FN91	10
58. Bukara area (above Kopitoto Peak)	1420-1450	42°37'45.48"; 23°14'40.74"	FN82	5
59. Bukite Peak (southwest of Zheleznitsa)	1200	42°31'38.49"; 23°21'20.83"	FN91	7
60. Byala Voda area (near Yarema)	1130	42°28'46.27"; 23°18'51.52"	FN90	5
61. Byalata Voda, surroundings (above Knyazhevo)	960-1000	42°38'32.67"; 23°13'57.31"	FN82	11
62. Chernata Skala Peak (below the peak)	1850	42°36'18.43"; 23°15'33.95"	FN82	4
63. Cherni Vrah Peak (below the peak, to the south)	2150	42°33'27.84"; 23°16'34.62"	FN81	10
64. Cherni Vrah Peak (below the peak)	2200	42°34'02.50"; 23°16'47.15"	FN81	5
65. Cherni Vrah Peak, surroundings	2270-2290	42°33'48.88"; 23°16'42.61"	FN81	6
66. Chernoto Plato area	2050	42°32'01.38"; 23°16'49.17"	FN81	3
67. Choveshki Kosti area	1950	42°34'29.20"; 23°14'30.68"	FN81	7
68. Chuypetlovo Chalet	1250	42°31'06.89"; 23°14'25.96"	FN80	11
69. Chuypetlovo Village (below the village)	1160	42°30'21.73"; 23°14'29.46"	FN80	9
70. Chuypetlovo Village	1200	42°30'50.30"; 23°14'27.20"	FN80	20
71. Chuypetlovo Village	1300	42°31'27.44"; 23°14'53.01"	FN81	14
72. Chuypetlovo Village (above the village)	1350-1400	42°31'56.47"; 23°15'12.26"	FN81	12
73. Dauta Peak (below the peak)	1450	42°30'19.22"; 23°15'26.50"	FN80	4
74. Dendrarium area	1150	42°37'47.55"; 23°13'01.76"	FN82	7
75. Dragalevska Reka River	750-1860		FN81, FN82	3
76. Dragalevska Reka (above Dragalevtsi)	1080	42°36'57.88"; 23°17'58.60"	FN81, FN82	1
77. Dragalevska Reka (below Kominite)	1393	42°36'20.80"; 23°17'33.68"	FN81, FN82	2
78. Dragalevska Reka (below Kominite)	1500	42°36'10.55"; 23°17'28.94"	FN81	1
79. Dragalevtsi 6 (below Dragalevtsi)	720	42°38'01.04"; 23°18'40.19"	FN82	3
80. Dragalevtsi (above Dragalevtsi)	870-880	42°37'26.12"; 23°18'19.16"	FN82	75
81. Dragalevtsi (above Dragalevtsi)	920	42°37'19.24"; 23°18'11.91"	FN82	2
82. Dragalevtsi (above Dragalevtsi)	1000	42°37'08.44"; 23°18'11.45"	FN82	9
83. Dragalevtsi (above Dragalevtsi)	1400	42°36'13.44"; 23°18'12.25"	FN81, FN82	5
84. Dragalevtsi (above Dragalevtsi)	1600	42°36'03.35"; 23°17'47.62"	FN81, FN82	3
85. Dragalevtsi Monastery, surroundings	1020	42°37'10.80"; 23°17'56.85"	FN82	9
86. Dragalevtsi Monastery (above the monastery)	1090	42°36'59.62"; 23°17'49.92"	FN82	2

Table 1. Continued.

Localities	Altitude (m)	GPS Navigation (°N, °E)	UTM Kode	Number of species
87. Duhlata Cave	992	42°29'41.80"; 23°12'05.06"	FN80	3
88. Duhlata Cave (near the cave)	964	42°29'31.26"; 23°11'43.55"	FN80	3
89. Duhlata Cave (near the cave)	992	42°29'47.32"; 23°11'46.05"	FN80	4
90. Duhlata Cave (near the cave)	1006	42°29'48.30"; 23°11'45.14"	FN80	4
91. Duhlata Cave – Chuyepetlovo Village	1120	42°29'51.80"; 23°14'01.50"	FN80	5
92. Edelways Chalet	1695	42°35'17.96"; 23°13'48.57"	FN81	1
93. Edelways Chalet – Konyarnika area	1820-1870	42°34'56.17"; 23°14'17.39"	FN81	2
94. Elovitsa area (below the area)	1100	42°28'04.15"; 23°16'03.53"	FN80	1
95. Elovitsa area	1332	42°28'47.61"; 23°15'16.27"	FN80	1
96. Esperanto Chalet, surroundings (Zeleni Patruli Chalet, below the chalet)	1260-1360	42°37'45.37"; 23°15'32.63"	FN82	7
97. Fonfon Chalet, surroundings	1520	42°36'18.57"; 23°14'22.87"	FN81	2
98. Fonfon Chalet – Konyarnika area	1535-1850		FN81	1
99. Goli Vrah Peak (near the peak)	1820	42°35'29.34"; 23°17'26.71"	FN81	1
100. Golyam Kupen Peak	1930	42°33'02.70"; 23°16'06.50"	FN91	6
101. Golyam Rezen Peak (below the peak)	2100	42°34'12.60"; 23°17'31.41"	FN81	3
102. Golyam Rezen Peak (below the peak)	2220	42°34'02.03"; 23°17'25.42"	FN81	2
103. Golyam Rezen Peak	2277	42°33'44.79"; 23°17'08.88"	FN81	1
104. Golyamata Gramada, surroundings	1550-1620	42°33'55.19"; 23°18'28.90"	FN81, FN91	7
105. Golyamata Gramada area	1550	42°33'54.30"; 23°18'46.68"	FN81, FN91	50
106. Golyamata Gramada (north of the area)	1620	42°33'57.29"; 23°18'26.61"	FN81	10
107. Gurgulitsa River (near Zheleznitsa Village)	1140	42°31'09.77"; 23°21'25.74"	FN91	2
108. Gyoreva Cheshma area	1750	42°36'46.16"; 23°16'07.98"	FN81	6
109. Kamen Del Chalet (near the chalet)	1470	42°37'29.42"; 23°16'06.07"	FN81	7
110. Kamen Del Chalet (above the chalet near Tintyava Chalet)	1470-1650	42°36'58.96"; 23°15'34.73"	FN81	5
111. Kamen Del Peak, surroundings	1840-1860	42°36'42.77"; 23°16'35.65"	FN81	2
112. Kapaklivets area – in Torfeno Branishte Reserve	1860	42°35'26.58"; 23°17'12.39"	FN81	2
113. Karkama area, surroundings	1650-1700	42°34'27.57"; 23°18'34.13"	FN81	13
114. Kirova (Karanova) Livada area (above Boyana, near Esperanto Chalet)	1360-1470	42°37'44.81"; 23°15'36.25"	FN81, FN91	72
115. Kladnishka River (near Studena Dam)	910	42°33'17.53"; 23°09'28.63"	FN71	10
116. Kladnitsa Village (below the village)	900-950	42°33'30.70"; 23°09'36.63"	FN81	22
117. Kladnitsa Village	1075	42°34'03.10"; 23°11'29.10"	FN81	18
118. Kladnitsa Village (above the village)	1200	42°34'14.12"; 23°11'53.14"	FN81	8
119. Kladnitsa Village (above the village)	1250	42°33'51.09"; 23°11'56.84"	FN81	7
120. Kladnitsa Village (above the village)	1500	42°34'05.03"; 23°12'59.80"	FN81	9
121. Knyazhevo (near Cherniya Kos)	750-800	42°38'52.12"; 23°12'44.20"	FN82	16
122. Knyazhevo, surroundings	770-830	42°38'54.81"; 23°14'22.89"	FN82	81
123. Knyazhevo (above Knyazhevo)	800	42°38'38.01"; 23°14'22.83"	FN82	8
124. Kominite area, surroundings	1700-1800	42°36'17.44"; 23°17'04.51"	FN81	8
125. Konyarnika area (below the area)	1750	42°35'32.46"; 23°14'59.82"	FN81	6
126. Konyarnika area	1870	42°35'21.78"; 23°14'57.07"	FN81	5
127. Konyarnika area (above the area)	1970	42°34'43.37"; 23°14'56.96"	FN81	1
128. Kopitoto Peak area (above Knyazhevo)	1150	42°38'20.95"; 23°14'45.00"	FN82	5

Table 1. Continued.

Localities	Altitude (m)	GPS Navigation (°N, °E)	UTM Kode	Number of species
129. Kopitoto Peak area (above Knyazhevo)	1250	42°38'13.73"; 23°14'12.45"	FN82	8
130. Kopitoto Peak area (near the area)	1300	42°38'09.63"; 23°14'54.74"	FN82	10
131. Kopitoto Peak (near the peak)	1340	42°38'11.80"; 23°14'36.06"	FN82	6
132. Kopitoto Peak area (east of the peak)	1350	42°38'00.07"; 23°14'52.76"	FN82	50
133. Kovachevtsi Village (near the village)	1000	42°26'56.54"; 23°19'18.66"	FN90	7
134. Kovachevtsi Village (above the village)	1030	42°27'28.46"; 23°19'38.92"	FN90	7
135. Kumata Chalet (below the chalet)	1500	42°36'19.08"; 23°14'30.66"	FN81	3
136. Kumata Chalet, surroundings	1550-1750	42°35'41.39"; 23°14'55.82"	FN81	12
137. Kupena Peak (below the peak in Kazana)	1810	42°32'07.91"; 23°18'37.57"	FN81	2
138. Kupena Peak (below the peak)	2000	42°32'14.63"; 23°18'17.39"	FN81	3
139. Kupena Peak	2196	42°32'08.23"; 23°17'44.13"	FN81	2
140. Malak Rezen Peak (east of the peak)	2000	42°34'28.82"; 23°17'34.76"	FN81	4
141. Malak Rezen Peak (north of the peak)	2100	42°34'29.84"; 23°17'23.50"	FN81	3
142. Malak Rezen Peak (near the peak)	2150	42°34'18.32"; 23°17'25.37"	FN81	30
143. Malak Rezen Peak	2191	42°34'11.48"; 23°17'18.16"	FN81	2
144. Marchaevo Village	920	42°35'53.71"; 23°10'23.17"	FN71	9
145. Markov Hozh area	1500	42°34'49.48"; 23°12'20.69"	FN71, FN81	3
146. Matnitsa River (near Studena Dam)	920	42°32'50.25"; 23°10'26.23"	FN71	5
147. Matnitsa River (near Kladnitsa Village)	1000	42°33'15.06"; 23°11'15.42"	FN71, FN81	6
148. Matnitsa River	1070-1090	42°33'16.67"; 23°11'51.72"	FN71, FN81	5
149. Matnitsa River (near the springs)	1900	42°33'31.02"; 23°15'06.22"	FN81	3
150. Mecha Dupka Peak	1902	42°32'49.56"; 23°15'58.75"	FN81	1
151. Mecha Mogila Peak (below the peak near Struma River)	1080	42°30'11.33"; 23°12'32.20"	FN80	4
152. Mecha Polyana area (near Aleko Chalet)	1790-1810	42°34'48.96"; 23°17'54.17"	FN81	9
153. Metalurg (Druzhba) Chalet	1217	42°37'05.63"; 23°13'10.65"	FN81	2
154. Momina Skala area	1000	42°38'19.22"; 23°15'46.37"	FN82	4
155. Momina Skala Chalet (below the chalet)	1450	42°37'34.70"; 23°15'04.28"	FN81	11
156. Nakev Kamak Peak, surroundings	1500-1521	42°33'34.99"; 23°13'16.88"	FN81	5
157. Nakev Kamak Peak (above the peak)	1580	42°33'44.21"; 23°13'26.67"	FN81	2
158. Northern slopes			FN82, FN92	1
159. Ostritsa Chalet (near the chalet)	1650	42°35'15.24"; 23°12'50.01"	FN81	2
160. Ostritsa Chalet – Edelvays Chalet	1660-1820	42°34'59.81"; 23°13'26.10"	FN81	1
161. Palakariya River	1090-1600		FN80	20
162. Palakariya River	1300	42°30'37.60"; 23°16'07.48"	FN80	9
163. Petrov Grob area (near Goli Vrah Peak)	1850	42°35'15.55"; 23°17'14.15"	FN81	8
164. Petrus Peak (below the peak)	1350	42°28'34.88"; 23°13'50.98"	FN80	5
165. Pogledets area	1500	42°34'43.05"; 23°19'17.61"	FN81, FN91	11
166. Pogledets Chalet (above the chalet)	1600	42°34'35.56"; 23°18'59.27"	FN81, FN91	2
167. Popov Izvor spring (near Bosnek Village)	900	42°30'07.75"; 23°09'11.66"	FN70	22
168. Popov Izvor Cave (near Bosnek Village)	910	42°30'08.48"; 23°09'11.01"	FN70	2
169. Prisoite area (in Bistrishko Branishte Reserve)	1620-1750	42°34'26.54"; 23°18'20.06"	FN81	4
170. Ribni Dol (east of the Bosnek Village above Struma River)	1240	42°29'39.26"; 23°14'05.11"	FN80	21
171. Rudartsi Village	730-800	42°35'32.65"; 23°09'54.84"	FN71	4
172. Rudartsi Village (below the village)	850	42°35'04.69"; 23°10'18.92"	FN71	18

Table 1. Continued.

Localities	Altitude (m)	GPS Navigation (°N, °E)	UTM Kode	Number of species
173. Rudartsi Village	870	42°35'34.11"; 23°10'03.81"	FN71	4
174. Rudartsi Village	900	42°34'36.21"; 23°10'40.94"	FN71	6
175. Rudnichar Chalet, surroundings	1630	42°35'18.56"; 23°12'53.21"	FN71, FN81	1
176. Samara Peak	2108	42°33'48.25"; 23°15'37.86"	FN81	9
177. Samara Peak (above the peak)	2150	42°33'49.48"; 23°16'11.08"	FN81	2
178. Samara Chelter (near the chelter)	2000	42°34'11.52"; 23°15'27.70"	FN81	5
179. Samokovishte Waterfall (Bistrishki Vodopad Waterfall)	1245	42°34'14.42"; 23°19'47.28"	FN81	6
180. Selimitsa Chalet (below the chalet)	1200	42°34'14.07"; 23°11'53.32"	FN81	3
181. Selimitsa Chalet, surroundings	1300-1320	42°34'23.25"; 23°12'13.49"	FN81	11
182. Selimitsa Chalet (above the chalet)	1350	42°34'18.59"; 23°12'22.39"	FN81	13
183. Selimitsa Peak	2041	42°34'18.80"; 23°14'30.68"	FN81	9
184. Septemvri Chalet	1495	42°37'04.34"; 23°14'40.48"	FN81, FN82	1
185. Septemvri Chalet (east of the chalet)	1500	42°37'04.98"; 23°14'42.78"	FN81, FN82	5
186. Shtastlivetsa Hotel (below the hotel)	1730	42°35'08.12"; 23°17'40.04"	FN81	1
187. Shtastlivetsa Hotel (below the hotel)	1770	42°35'11.50"; 23°17'33.02"	FN81	3
188. Shtastlivetsa Hotel	1811	42°34'59.99"; 23°17'29.29"	FN81	3
189. Skoparnik Peak (below the peak)	2000	42°32'59.60"; 23°18'19.67"	FN81	5
190. Skoparnik Peak (below the peak)	2200	42°32'45.10"; 23°17'56.48"	FN81	2
191. Skoparnik Peak	2226	42°33'02.72"; 23°17'37.84"	FN81	3
192. Simeonovo, surroundings	650-900	42°36'38.12"; 23°20'13.07"	FN92	46
193. Simeonovo (above Simeonovo)	820	42°36'35.90"; 23°20'28.01"	FN92	33
194. Simeonovo (near Simeonovo)	830	42°36'35.09"; 23°20'24.25"	FN92	8
195. Simeonovo (near Vartopo River)	830	42°36'36.63"; 23°20'25.86"	FN92	4
196. Simeonovo (above Simeonovo)	880	42°36'37.56"; 23°19'56.82"	FN92	10
197. Simeonovo (above Simeonovo)	920	42°36'29.59"; 23°19'48.72"	FN92	5
198. Simeonovo (above Simeonovo)	1320	42°35'45.39"; 23°19'21.27"	FN81, FN92	6
199. Sredets Chalet, surroundings	1590	42°37'12.21"; 23°15'36.06"	FN81, FN82	9
200. Stara Reka River	800-1350		FN81, FN92	3
201. Starcheski Polyani area	1096	42°38'17.02"; 23°13'22.56"	FN82	5
202. Struma River (above the Studena Dam)	900	42°30'09.73"; 23°09'15.70"	FN70	3
203. Struma River (below the Bosnek Village)	900-910	42°29'46.53"; 23°10'02.10"	FN70	3
204. Struma River (Bosnek – Chuypetlovo)	1000-1200		FN80	2
205. Struma River	1350	42°31'41.74"; 23°15'05.91"	FN80, FN81	7
206. Struma River	1680	42°32'28.03"; 23°16'06.71"	FN81	2
207. Struma River (below the springs)	1800-2000		FN81	6
208. Struma River (springs)	2100-2200		FN81	1
209. Studena Dam (above the dam)	860-890	42°33'14.49"; 23°09'36.25"	FN71	5
210. Studena Dam (above the dam)	1050	42°31'55.32"; 23°10'26.72"	FN71	9
211. Suhoto Ezero Lake	2150	42°33'17.05"; 23°16'45.24"	FN81	1
212. Tihiya Kat Complex, surroundings	1000-1050	42°38'19.53"; 23°13'09.05"	FN82	11
213. Tihiya Kat Complex (above the complex)	1030	42°38'30.09"; 23°13'26.95"	FN82	4
214. Tintyava Chalet (below the chalet)	1600	42°37'07.87"; 23°15'30.72"	FN81, FN82	6
215. Tintyava Chalet (above the chalet)	1650-1750	42°36'59.34"; 23°15'37.40"	FN81	8
216. Tri Kladentsi area (near Selimitsa Peak)	2020	42°34'24.18"; 23°14'49.84"	FN81	6

Table 1. Continued.

Localities	Altitude (m)	GPS Navigation (°N, °E)	UTM Kode	Number of species
217. Tyasnata peshtera (cave near Bosnek Village, near Zhivata Voda Cave)	1100	42°31'28.88"; 23°12'14.74"	FN81	1
218. Ushite Peak	1906	42°36'25.30"; 23°16'28.04"	FN81	3
219. Varla River (above the Struma River)	1600-1700	42°32'33.75"; 23°15'35.99"	FN81	1
220. Varla River (near Cherni Vrah Peak)	2150	42°33'26.02"; 23°16'38.08"	FN81	3
221. Vitosha Mt. (without exact locality)	800-2290			366 (236)
222. Vladaya Village (north of the village)	840	42°38'15.83"; 23°11'57.24"	FN82	10
223. Vladaya Village (above the village)	890-950	42°38'03.22"; 23°12'26.00"	FN72, FN82	35
224. Vladaya Village (above the village)	980	42°37'23.62"; 23°12'29.37"	FN72, FN82	4
225. Vladaya Village (above the village, near Vladayska Reka River)	1080	42°37'08.30"; 23°12'37.17"	FN82	22
226. Vladaya Village (above the village)	1100-1130	42°36'59.07"; 23°12'56.64"	FN82	12
227. Vladayska Reka River (near Knyazhevo)	680	42°39'23.87"; 23°13'55.06"	FN82	2
228. Vladayska Reka (Vladaya – Knyazhevo)	810	42°38'22.67"; 23°12'04.27"	FN82	5
229. Vladayska Reka River	850-2050		FN81, FN82	7
230. Vladayska Reka (springs)	2000-2100	42°34'17.55"; 23°16'24.73"	FN81	1
231. Yanchevska Reka River	800-1900		FN81, FN91	5
232. Yarema	1080	42°28'06.47"; 23°20'12.64"	FN90	13
233. Yarema (near Kurtova Reka River)	1120	42°30'33.02"; 23°21'36.51"	FN90	6
234. Yarema (col, area), surroundings	1100-1200	42°30'24.54"; 23°20'35.59"	FN90	21
235. Yarlovo Village (near the village)	1100	42°28'43.82"; 23°16'19.77"	FN80	21
236. Yarlovo Village (above the village)	1140-1200	42°29'13.62"; 23°16'10.48"	FN80	18
237. Yarlovski Kupen Peak	2173	42°32'04.71"; 23°17'35.09"	FN81	3
238. Zhedna River (above Studena Dam)	1100	42°32'24.06"; 23°11'48.43"	FN71, FN81	7
239. Zheleznitsa Village (above the village, near the Selskata Reka River)	1050	42°32'02.28"; 23°21'49.94"	FN91	41
240. Zheleznitsa Village (above the village)	1080	42°31'57.53"; 23°21'47.24"	FN91	5
241. Zheleznitsa Village (above the village)	1100	42°32'02.26"; 23°21'41.45"	FN91	12
242. Zheleznitsa Village (above the village and Selskata Reka River)	1150	42°32'07.26"; 23°21'12.21"	FN91	34
243. Zheleznitsa Village (above the village)	1200	42°31'56.14"; 23°21'18.07"	FN91	40
244. Zheleznitsa Village (above the village, near the Selskata Reka River)	1250	42°32'13.24"; 23°20'23.42"	FN91	29
245. Zheleznitsa Village (above the village and Selskata Reka River)	1280-1300	42°32'12.85"; 23°20'08.96"	FN91	11
246. Zheleznitsa Village (above the village, near the Selskata Reka River)	1300	42°32'11.71"; 23°20'09.44"	FN91	18
247. Zheleznitsa Village (above the village)	1450-1550	42°32'37.89"; 23°19'52.80"	FN91	8
248. Zheleznitsa Village (above the village)	1550	42°32'48.54"; 23°19'53.19"	FN91	22
249. Zheleznitsa Village – Akademik Chalet (above the village)	1400	42°32'29.41"; 23°20'23.33"	FN91	7
250. Zheleznitsa Village – Akademik Chalet	1500	42°32'36.06"; 23°20'01.18"	FN91	2
251. Zhivata Voda Cave (near the cave)	1118	42°31'28.88"; 23°12'14.74"	FN81	9
252. Zlatni Mostove (below Zlatni Mostove)	1100	42°37'05.04"; 23°12'43.55"	FN82	7
253. Zlatni Mostove (below Zlatni Mostove)	1300-1350	42°36'42.81"; 23°14'01.98"	FN81	20
254. Zlatni Mostove, surroundings	1400-1420	42°36'35.22"; 23°14'20.09"	FN81	56
255. Zlatni Mostove (above Zlatni Mostove)	1430	42°36'32.58"; 23°14'23.88"	FN81	16
256. Zlatni Mostove (above Zlatni Mostove)	1500	42°36'19.99"; 23°14'33.60"	FN81	7

Table 2. Diptera (Insecta) of the Vitosha, Rila and Pirin mountains

Note. Species which have not exact localities (only Vitosha is given) are not included in the distribution according to the vegetation belts and parts. They are presented only in the total number of the Vitosha Mt.

Families	Species of the Vitosha Mt.								Species of the Rila Mts.		Species of the Pirin Mts.			
	Vegetation belts				Parts of Vitosha Mt.				Total number	Number	%	Number	%	
	Mixed	Beech	Coniferous	Subalpine	Northern	Eastern	Southern	Northwestern						
NEMATOCERA	175	168	72	27	181	128	43	70	317	24.84	294	29.31	200	26.35
Tipulidae	10				10			2	12	0.94	9	0.90		
Limoniidae	17	16	16	1	31	20		18	52	4.09	62	6.18	84	11.06
Pediciidae	1	2	2		3	3		2	6	0.47	13	1.30	9	1.18
Blephariceridae					6				6	0.47	2	0.20		
Bibionidae											4	0.40		
Mycetophilidae		1						1		0.08	14	1.40	15	1.98
Bolitophilidae											4	0.40	5	0.66
Diadocidiidae											1	0.10	1	0.13
Keroplatidae											3	0.30	3	0.39
Macroceridae											4	0.40	4	0.53
Sciaridae	20	29	2		20	26			41	3.22	4	0.40		
Cecidomyiidae	91	94	25	7	89	75	32	46	138	10.84	65	6.48	54	7.11
Psychodidae	2	2			2				2	0.16				
Trichoceridae		1				1			1	0.08	1	0.10		
Scatopsidae											1	0.10		
Ptychopteridae											1	0.10	1	0.13
Culicidae	7	4	1		8				10	0.79	9	0.90		
Thaumaleidae									1	0.08				
Simuliidae	12	17	26	18	2	1	10	2	35	2.75	37	3.69	10	1.32
Ceratopogonidae	4	1			4				4	0.31	6	0.60	1	0.13
Chironomidae	5	1		1	6	2			8	0.62	53	5.28	13	1.71
ORTHORRHAPHA	67	20	11		64	23	4	5	125	9.83	108	10.77	53	6.98
Coenomyiidae											1	0.10		
Xylophagidae									1	0.08				
Stratiomyidae	8				8				10	0.79	5	0.50	12	1.58
Rhagionidae	5				4	2			5	0.39	5	0.50	8	1.05
Athericidae	2				2				2	0.16				
Tabanidae	10	1			10				21	1.65	25	2.49	5	0.66
Acroceridae												1	0.13	
Bombyliidae	10				10	1			13	1.02	9	0.90		
Therevidae	2				2	1			2	0.16	2	0.20		
Asilidae	14		1		14	1			22	1.73	23	2.29	11	1.45
Empididae	13	11	6		11	6	4	5	29	2.28	8	0.80	7	0.92
Hybotidae	2				2				5	0.39	5	0.50	3	0.39
Microphoridae									2	0.16				

Table 2. Continued.

Dolichopodidae	1	8	4		1	12			13	1.02	25	2.49	6	0.79
CYCLORRHAPHA	465	404	177	116	400	349	249	109	830	65.25	601	59.92	506	66.67
Platypezidae											1	0.10		
Phoridae ¹	119	138	72	68	125	118	93	26	203	15.96	1	0.10	2	0.26
Pipunculidae	3	1	4		1	1	1		7	0.55	5	0.50	14	1.84
Syrphidae	51	4	4		49	3	3		130	10.22	149	14.86	49	6.46
Micropezidae		1				1			1	0.08				
Conopidae	4	2			4				8	0.63	20	1.99	2	0.26
Lonchaeidae		1				1			1	0.08				
Otitidae	1				1				1	0.08				
Platystomatidae	1				1				1	0.08				
Tephritidae	8				8				9	0.71	8	0.80	2	0.26
Piophilidae													1	0.13
Lauxaniidae											1	0.10		
Cremifaniidae											1	0.10		
Chamaemyiidae		3	2	1	1	1	1		6	0.47	1	0.10	12	1.58
Dryomyzidae									1	0.08				
Sciomyzidae	1				1				2	0.16	2	0.20		
Sepsidae									1	0.08			1	0.13
Agromyzidae	3	2			1	1	1	1	19	1.49	48	4.79	15	1.98
Opomyzidae	5	5	3	2	4	6	2	2	6	0.47	2	0.20	3	0.39
Periscelididae	1	1				1			1	0.08				
Braulidae	1				1				1	0.08				
Carnidae	2	2			1	2	1		3	0.24			5	0.66
Milichiidae		1				1			1	0.08	1	0.10	4	0.53
Chloropidae	51	61	27	19	34	62	33	30	79	6.21	61	6.08	72	9.49
Heleomyzidae	2					2			2	0.16	2	0.20		
Sphaeroceridae											2	0.20	2	0.26
Camillidae													1	0.13
Drosophilidae											1	0.10		
Diastatidae											1	0.10	1	0.13
Ephydriidae	16	22	7	5	9	23	7	8	29	2.28	26	2.59	33	4.35
Hippoboscidae	1	2				1	2		2	0.08	2	0.20	2	0.26
Scathophagidae	2				2				2	0.16	2	0.20		
Anthomyiidae	2	4			6	1			9	0.71	3	0.30	1	0.13
Fanniidae	2				2				2	0.16	2	0.20	6	0.79
Muscidae	21	20	19	5	25	13	2	1	53	4.17	55	5.48	49	6.45
Calliphoridae	11	2	1		10	2	1		15	1.18	14	1.40	3	0.39
Sarcophagidae	13	3	2		13				25	1.96	24	2.39	18	2.37
Rhinophoridae	1				1				1	0.08	1	0.10		
Hypodermatidae	1					1			1	0.08				
Gasterophilidae											3	0.30		
Tachinidae	142	129	40	16	101	112	98	41	208	16.35	162	16.15	203	26.74
Families - 76	47	34	19	11	43	30	20	13	58	54.7	58	54.7	44	41.5
Species - 1987	707	592	260	143	645	500	296	184	1272	31.7	1003	25.1	759	19.0

the increase of great number of species to be established in the southern part.

In comparison with the Central Balkan National Park [184 species (Hubenov et al., 2000a)], East Rhodopes [279 species (Hubenov 2004)], Pirin Mts. [742 species (Hubenov 2015b)] and Rila Mts. [1003 species (Hubenov 2016)], it is seen that the dipteran fauna of the Vitosha Mt. is commensurable with this of the Rila Mts. and exceeds the fauna of the Central Balkan, East Rhodopes and Pirin Mts. It should be kept in mind that Vitosha is the most studied Bulgarian mountain, whereas the Central Balkan and East Rhodopes are poorly explored with respect to the two-winged insects. From the whole territory of the Stara Planina Mts. (insufficiently studied), about 600-700 species are reported. Regarding the dipterans, the Pirin Mts. is also poorly studied as compared to the Rila and Vitosha Mountains. In the better studied families (Limoniidae, Simuliidae, Syrphidae, Chloropidae, Ephydriidae, Muscidae and Tachinidae), the differences between the Vitosha, Rila and Pirin Mountains are not big (Table 2). It is expected, after further investigations, that the dipteran fauna of the Pirin Mts. will exceed most of the Bulgarian mountains in terms species composition. This is related to the wide variety of natural habitats, as well as to the geographical location which the mountain occupies in Southwest Bulgaria (Hubenov 2015b).

Most species (707 species or 55.6%) have been established in the mesophilic and xeromesophilic mixed forests belt, despite its lack in the east part of the mountain – a specific feature of the Vitosha Mt.. On the other hand, in the Rila and Pirin Mountains most species are found in the beech forests belt (Hubenov 2015b, 2016). This is owing both to the open spaces to which species of the contiguous valleys penetrate and the great number of localities (100 or 39.1%) below 1100 m a.s.l. in the Vitosha Mt. In contrast to the Rila and Pirin Mountains (where this belt is the second one), the Vitosha Mt. begins with the mesophilic and xeromesophilic mixed forests belt. In the beech forests, 592 species have been found (46.5%) – less than in the Pirin and Rila Mountains where the percentage varies from 55.1% (in Pirin) to 73.4% (in Rila). Of the well-studied families Sciaridae, Cecidomyiidae, Phoridae, Chloropidae and Ephydriidae, most species are found in the beech forests belt. The border between the beech and coniferous forests

of the Vitosha Mt. is not clear and depends on the exposure, relief and anthropogenic impact; there are areas of mixing (200-300 m a.s.l.), replacement of coniferous with beech forests or deforestation areas. This determines the high species richness in the beech belt, the great number of common species and the similarity of the fauna of Diptera with the one of the coniferous belt. Regarding the hypsometric belts, the maximum number of species is recorded between 900 and 1300 m a.s.l. (like the Pirin Mts.). The upper limit of the coniferous belt (where it is developed) gradually passes into the subalpine vegetation zones with a mixture of regions at about 100-200 m a.s.l. Thus, most of the species are common to both vegetation belts and the number of taxa established in the subalpine belt increases. Of the species found in the subalpine belt (143 species or 11.2%), fourteen species are typical for it (Table 3). *Megaselia robusta* Schmitz (Holarctic species of Phoridae) and *Platymya fimbriata* Meigen (Transpalaearctic species of Tachinidae) are boreomontane species and *Allophorocera pachystyla* Macquart (European species of Tachinidae) is a montane species. There are eight boreomontane species of Cecidomyiidae, Phoridae and Tachinidae, found in the coniferous and other vegetation belts. The percentage difference in the species composition of the subalpine belt with the Rila (9.9%) and Pirin Mts. (10.6%) is not great but for Vitosha Mt. it is the last vegetation belt. More significant is the difference in the coniferous belt: 20.5% of the Vitosha Mt., 27.6% of the Rila Mts. and 35.7% of the Pirin Mts. In some cases, the finding of species at a certain altitude takes place accidentally. The lack of systematic research on Diptera of the Vitosha Mt. and the fragmentary data for most families do not allow explicit conclusions about the adherence of the taxa to one or another vegetation zone to be made. The distribution of species in groups according to their presence in the vegetation belts has a relative character and depends on the specific features of taxa and research area, as well as on the duration of the research. There is a correlation between the horizontal and vertical distribution of Diptera. A total of 77 species from nine families (Limoniidae, Cecidomyiidae, Simuliidae, Phoridae, Chamaemyiidae, Chloropidae, Ephydriidae, Muscidae and Tachinidae) is established at 2000 m a.s.l. They comprise 20 types of large areas of European, Euro-Siberian,

Palaearctic, Super-Palaearctic and Cosmopolitan type (Table 3).

The zoogeographical categorisation of the species (Table 3) is made on the basis of current data about their distribution. Thus, the dipterans are divided into 83 areographical categories, combined into two main groups and six sub-groups (Table 4).

Species distributed in the Palaearctic and beyond it. This group (254 species or 20.0%) includes 33 categories, of which 26 combine species of northern type (widely distributed in the Holarctic and Palaearctic) and seven species of southern type (distributed only in the southern parts of the Palaearctic). The difference between the separate vegetation belts with respect to this group is from 0.7 to 2.1% (or from 28 to 145 species). The difference between the mixed and beech forests is the highest, whereas in the other belts it does not exceed 1.7% (contrary to the Rila and Pirin Mountains where the differences between the first four belts are minimal). It is very likely other species of the group of northern type in the last two vegetation belts of the Vitosha Mt. to be established owing to their distribution and insufficient studies of the higher parts of the mountain. It is accepted that the species of northern type have vast areas and ecological flexibility. In the Superpalaearctic complex (like the Rila and Pirin mountains), the Holarctic species (137 species or 10.7%) prevail and as compared to the other areographical categories where the Holarctic-Oriental (28 species or 2.2%) and the Palaearctic-Oriental forms (23 species or 1.8%) are better presented (Table 4). The species of the southern type are found only in the first vegetation belt. Usually the scrutinised areographical complex is scanty presented and is not determinant for the zoogeographical characteristic of the taxa in the Bulgarian terrestrial fauna. In a highly mobile forms (such as Diptera) the complex is better presented and can reach 20-25%. It is better presented in the Rila Mts. (25.7%) and the Pirin Mts. (21.0%) than the Vitosha Mt. In the two-winged insects significant numbers of synanthropic and symbiotic forms with cosmopolitan distribution occur. They have anthropogenic areas, structured with the development of the human civilization (before the beginning of the contemporary research).

Species distributed only in the Palaearctic, but in more than one subregion (Palaearctic

type). Taxa, whose areas include more than one Palaearctic subregion in latitudinal direction, belong to this group. They are well represented in the high mobile groups and comprise about 25-30% of the species composition. A total of 302 species (23.7%) from this group, combined into 24 areographical categories, has been established in the Vitosha Mt. (Table 4). Its character is determined by the Transpalaearctic (87 species or 6.8%), West Palaearctic (37 species or 2.9%), European-North African (31 species or 2.4%) and West and Central Palaearctic (30 species or 2.4%) species, which are the most numerous. The correlation of these categories (with the exception of the West-Palaearctic ones) remains the same in the separate vegetation belts of the Vitosha Mt. with small deviations and ranges from 0.7% to 7.5% (1 to 53 species). The Eurosiberian-Central Asian and Holopalaearctic species are well presented (17-18 species or 1.3-1.4%). Twenty-six species (2.0%) have a longitudinal disjunction of the areas with regard to Siberia and Central Asia (Tables 3 and 4). Probably some of these species are presented with sparse populations and will be studied in more detail as a result of further research. Most often a latitudinal disjunction of the areas of this group lacks (Gorodkov 1984, Josifov 1988, Hubenov 2015a). A significant portion of the species with wide vertical distribution (about 25%) belong to this group. It includes from 21.7% to 25.5% (31 to 180 species) of the species composition in the separate vegetation belts (Table 4). The vast areas and wide vertical distribution of the taxa of this group are an indication of the greater ecological flexibility of its species. This group is represented a little better in terms of relative abundance in the Pirin and Rila Mountains where it comprises from 25.8% to 27.5% of the known dipterans.

Species distributed within one subregion of the Palaearctic. This group (716 species or 56.3%) includes species with Eurosiberian (655 species or 51.5%) and Mediterranean (46 species or 3.6%) type of distribution (Tables 3 and 4). Endemics are included in this group. The Mediterranean-Central Asian species are also included here according to Kryzhanovsky (1965, 2002) and Lopatin (1989) who combine the Mediterranean and Central Asian subregions. The species with Mediterranean type of distribution are accepted in a general way and include Submediterranean, Subiranian and Pontian

Table 3. Species composition and distribution of Diptera (Insecta) of the Vitosha Mt.

Taxa	Localities of Vitosha	Vertical (m)	Distribution						References			
			Vegetation belts.		Parts of Vitosha		Areographical categories					
			Northwestern	Eastern	Subalpine	Mountainous	Beech	Mixed				
NEMATOCERA												
Tipulidae / 12												
<i>Nephrotoma appendiculata</i> (Pierre, 1919)	80	870-880	•						? wp can, ? wes ena			
<i>Nephrotoma pratinensis</i> (Linnaeus, 1758)	122	800-830	•	•					168			
<i>Tipula (Acutipula) maxima</i> Poda, 1761	85	1020	•	•	•				168			
<i>Tipula (Lunatipula) mellea</i> Schummel, 1833	80	870-880	•	•	•				168			
<i>Tipula (Lunatipula) vernalis</i> Meigen, 1804	42, 80	820-870	•	•	•				168			
<i>Tipula (Tipula) oleracea</i> Linnaeus, 1758	41, 80, 122	820-880	•	•	•				168			
<i>Tipula (Vestiplex) scripta</i> Meigen, 1830	9	800-1000	•			♦		hoes	168			
<i>Tipula (Yamatotipula) caesta</i> Schummel, 1833	42, 80	820-870	•	•				can	168			
<i>Tipula (Yamatotipula) lateralis</i> Meigen, 1804	221							wcp	168			
<i>Tipula (Yamatotipula) marginella</i> Theowald, 1980	41	820-830	•	•					168			
<i>Tipula (Yamatotipula) montium</i> Egger, 1863	9	800-1000	•			♦		wces	168			
<i>Tipula (Yamatotipula) pruinosa</i> Wiedemann, 1817	221							hoes	168			
Limoniidae / 52												
<i>Austrolimnophila (Archilimnophila) ochracea</i> (Meigen, 1804)	221					♦		eit	137			
<i>Dactylolabis (Dactylolabis) sexmaculata</i> (Macquart, 1826)	254	1400-1420	•			♦	♦	e, ? cse	137			
<i>Dactylolabis (Dactylolabis) symplectoides</i> Egger, 1863	223	890-950	•	•	•	♦		sena	136, 168			
<i>Dactylolabis (Dactylolabis) transversa</i> (Meigen, 1804)	80, 254	870-1420	•	•	•	♦		♦, e, ? cse	136, 137, 168			
<i>Epiphrama (Epiphrama) ocellare</i> (Linnaeus, 1761)	221					♦		h	137			
<i>Eloeophila maculata</i> (Meigen, 1804)	80	870-880	•			♦		? et	157			
<i>Eloeophila sparsipunctum</i> Starý, 2009	221					♦		Ebg	176a			
<i>Eloeophila submarmorata</i> (Verrall, 1887)	221					♦		eit	137			
<i>Eloeophila verralli</i> (Bergroth, 1912)	80	870-880	•			♦		ena	157			
<i>Euphydorea lineola</i> (Meigen, 1804)	221, 223	890-950	•	•	•	♦		wp	136, 137, 168			
<i>Limnophila (Limnophila) pictipennis</i> (Meigen, 1818)	42	820-830	•	•	•	♦		hoes	136, 168			
<i>Limnophila (Limnophila) schrankii</i> Oosterbroek, 1992	80	870-880	•	•	•	♦		et	157			

Table 3. Continued.

<i>Phyllocorea (Phyllocorea) ferruginea</i> (Meigen, 1818)	221		◆		esca, ? wces	136, 168
<i>Prionolabis hospes</i> (Egger, 1863)	65, 221	2270-2290	●		e, ? cse	137
<i>Hexatoma (Eriocera) chirothecata</i> (Scopoli, 1763)	80, 221	870-880	●		cse	136, 168
<i>Crypteria (Crypteria) lynnophiloides</i> Bergroth, 1913	221		◆		e	136, 137
<i>Neolimnophila carteri</i> (Tonnor, 1921)	254	1400-1420	◆		ean	137
<i>Erioptera (Erioptera) lutea</i> Meigen, 1804	254	1400-1420	◆		wcp	137
<i>Scleroprocta pentagonalis</i> (Loew, 1873)	80	870-880	●		ewca	157
<i>Synplecia (Synplecia) hybrida</i> (Meigen, 1804)	254	1400-1420	◆		ho	137
<i>Eriocnopa symplectoides</i> (Kuntze, 1914)	221		◆		hom	137
<i>Molophilus (Molophilus) ater</i> (Meigen, 1804)	254	1400-1420	◆		des	137
<i>Molophilus (Molophilus) brevihamatus</i> Bangert, 1947	80	870-880	◆		cse	157
<i>Molophilus (Molophilus) corniger</i> Meijere, 1920	221		◆		e	136
<i>Molophilus (Molophilus) curvatus</i> Tonnor, 1920	80	870-880	●		e	157
<i>Molophilus (Molophilus) czizeki</i> Lackschewitz, 1931	221		◆		cse	137
<i>Molophilus (Molophilus) obsoletus</i> Lackschewitz, 1940	221		◆		Ebs, ? ban	137
<i>Molophilus (Molophilus) ochraceus</i> (Meigen, 1818)	221		◆		ean	136
<i>Ormosia (Ormosia) amicorum</i> Savchenko & Tomov, 1975	254	1400-1420	◆		Ebg	137
<i>Ormosia (Ormosia) bifida</i> (Lackschewitz, 1940)	221		◆		e, ? cse	136
<i>Ormosia (Ormosia) lineata</i> (Meigen, 1804)	221		◆		e	137
<i>Ormosia (Ormosia) microstyla</i> Savchenko, 1973	254	1400-1420	◆		see	137
<i>Ormosia (Ormosia) pirinensis</i> Starý, 1971	254	1400-1420	◆		Ebg	137
<i>Rhypholophus obtusistyla</i> (Starý, 1976)	221		◆		Ebg	136
<i>Rhypholophus phryganopterus</i> Kolenati, 1860	221		◆		cse, ? e	137
<i>Tasiocera (Dasymolophilus) murina</i> (Meigen, 1818)	80, 254	870-1420	●		e	137, 157
<i>Dicranomyia cimarrascens</i> (Meigen, 1818)	221		●		e	168
<i>Gonomyia (Gonomyia) simplex</i> Tonnor, 1920	254	1400-1420	◆		e	137
<i>Gonomyia (Gonomyia) securiformis</i> Starý, 2011	221		◆		? e	177a
<i>Dicranomyia (Dicranomyia) autumnalis</i> (Slæger, 1840)	221		◆		? po	177
<i>Dicranomyia (Dicranomyia) mitis</i> (Meigen, 1830)	254	1400-1420	●		wp	137
<i>Dicranomyia (Dicranomyia) signatella</i> Starý & Freiberg, 2007	80	870-880	●		em	157
<i>Dicranomyia (Glochima) tristis</i> (Schummel, 1829)	80	870-880	●		ho	157
<i>Dicranomyia (Idionga) nigristigma</i> Nielsen, 1919	221		◆		e	177
<i>Limonia hercegovinae</i> (Strobl, 1898)	80	870-880	●		? et	157
<i>Limonia macrostigma</i> (Schummel, 1829)	254	1400-1420	●		po	137
<i>Limonia nigropunctata</i> (Schummel, 1829)	254	1400-1420	●		e, ? wces	137
<i>Limonia nubeculosa</i> Meigen, 1804	85, 221	1020-1200	●		h	136, 157
<i>Limonia pannonica</i> (Kowarz, 1868)	221		◆		cse	137

Table 3. Continued.

<i>Metalimnobia (Metalimnobia) zeiterstedi</i> (Tjeder, 1968)	254	1400-1420	◆	◆	hoes	137
<i>Neolimonia dumetorum</i> (Meigen, 1804)	254	1400-1420	●	●	e	137
<i>Rhipidia (Rhipidia) uniseriata</i> Schiner, 1864	80	870-880	●	●	hoes	137
Pediciidae / 6						
<i>Dicranota (Paradicranota) candelisegua</i> Stary, 1981	221		◆		csec	137
<i>Dicranota (Paradicranota) fuscipennis</i> Lackschewitz, 1940	80	870-880	●		cse	157
<i>Dicranota (Paradicranota) subtilis</i> Loew, 1871	254	1400-1420	◆	◆	e	137
<i>Tricyphona (Tricyphona) immaculata</i> (Meigen, 1804)	221		◆	◆	? wp	137
<i>Ula (Ula) mollissima</i> Haliday 1833	221		●		ean	136
<i>Ula (Ula) sylvatica</i> (Meigen, 1818)	254	1400-1420	◆	◆	hoes	137
BLEPHAROCEROMORPHA						
Blephariceridae / 6						
<i>Blepharicera fasciata</i> (Westwood, 1842)	122, 222, 228, 252	800-1100	●		? cset	125, 172
<i>Liponeura brevirostris</i> Loew, 1877	228, 252	810-1100	●	●	e, ? cse	172
<i>Liponeura buresi</i> Komarek & Vimmer, 1934	228, 252	810-1100	●	●	Eb	172
<i>Liponeura cinerascens</i> Loew, 1844	80, 76, 229, 252	870-1100	●		esean	127, 172
<i>Liponeura komareki</i> Vimmer, 1916	122	770-830	●	●	Ebg	126, 127, 194
<i>Liponeura vimmeri</i> Mannheim, 1954	122	800-830	●		csee	156
BIBIONOMORPHA						
Mycetophilidae / 1						
<i>Anacelitea beshovskii</i> Bechey, 1990	236	1200	●	●	csec	5
Sciaridae / 41						
<i>Brachysia angustipennis</i> Winnertz, 1867	248	1550	●	●	e	59
<i>Brachysia bicolor</i> (Meigen, 1818)	248	1550	●	●	e	59
<i>Brachysia brevispina</i> Tuomikoski, 1960	47, 49	800-1000	●	●	des	59
<i>Brachysia lobulifera</i> Frey, 1948	248	1550	●	●	wes	59
<i>Brachysia ocellaris</i> (Comstock, 1882)	248	1550	●	●	h, i, ? k	59
<i>Brachysia pectoralis</i> (Staeger, 1840)	192	650-850	●	●	e	59
<i>Brachysia placida</i> (Winnertz, 1867)	47, 49	800-1000	●	●	e	59
<i>Brachysia regularis</i> (Lengersdorf, 1934)	234	1100	●	●	e	59
<i>Brachysia submoesta</i> Mohrig & Krivosheina, 1989	248	1550	●	●	e	59
<i>Brachysia tilicola</i> (Loew, 1850)	80, 248	870-1550	●	●	des	59, 168
<i>Brachysia trivittata</i> (Staeger, 1840)	248	1550	●	●	et	59
<i>Campiochaeta bourneti</i> (Shaw, 1941)	234	1100	●	●	e	59
<i>Claustrolyga abblanda</i> (Freeman, 1983)	47, 49	800-1000	●	●	e, ? et	59

Table 3. Continued.

<i>Corynoptera acerrima</i> Mohrig & Dimitrova, 1992	54	1000-1200	csee	162
<i>Corynoptera ahticola</i> (Kieffer, 1919)	54	1000-1200	ena	162
<i>Corynoptera applanata</i> Mohrig & Dimitrova, 1992	42, 47	800-900	se	162
<i>Corynoptera bistrispina</i> (Bukowski & Lengersdorf, 1936)	47, 49	800-1000	? des	59
<i>Corynoptera forcipata</i> (Winnertz, 1867)	47, 192	650-800	ena	59
<i>Corynoptera imngardis</i> (Lengersdorf, 1930)	234	1100	e	59
<i>Corynoptera luteofusca</i> (Bukowski & Lengersdorf, 1936)	42	800	e	59
<i>Corynoptera magica</i> Mohrig & Dimitrova, 1992	248	1550	Ebg	162
<i>Corynoptera obscuripila</i> Tuomikoski, 1960	54	1000-1200	e	59
<i>Corynoptera subparvula</i> Tuomikoski, 1960	247	1450-1550	et	59
<i>Corynoptera subtilis</i> (Lengersdorf, 1929)	234	1100	e	59
<i>Corynoptera trepida</i> (Winnertz, 1867)	234	1100	e	59
<i>Cratyna (Cratyna) ambigua</i> (Lengersdorf, 1934)	234	1100	e	59
<i>Ctenosciara hyalipennis</i> (Meigen, 1804)	42, 47	800	e, ? i, poa	59
<i>Epidapus</i> (<i>Epidapus</i>) <i>antegracilis</i> Mohrig & Dimitrova, 1993	247	1450-1550	Ebg	163
<i>Epidapus</i> (<i>Epidapus</i>) <i>bipalpus</i> Mohrig, 1982	247	1450-1500	cse	59
<i>Epidapus</i> (<i>Epidapus</i>) <i>derritcola</i> (Kratochvil, 1936)	47, 54	800-1050	cse	59
<i>Epidapus</i> (<i>Epidapus</i>) <i>gracilis</i> (Walker, 1848)	42, 82, 152, 234, 246	800-1800	e	59
<i>Epidapus</i> (<i>Epidapus</i>) <i>schilleri</i> (Börner, 1903)	234, 248	1100-1550	e	59
<i>Epidapus</i> (<i>Pseudodopteranogyna</i>) <i>carpathicus</i> (Mohrig & Mamaev, 1985)	247	1450-1550	csee	59
<i>Leptosiarella</i> (<i>Leptosiarella</i>) <i>coarctata</i> (Winnertz, 1867)	54, 248	1000-1550	e	59
<i>Leptosiarella</i> (<i>Leptosiarella</i>) <i>scutellata</i> (Staeger, 1840)	54	1000-1200	des	59
<i>Leptosiarella</i> (<i>Leptosiarella</i>) <i>vittata</i> (Winnertz, 1867)	42, 47	770-850	e	59
<i>Lycoriella</i> (<i>Lycoriella</i>) <i>castaneus</i> (Lengersdorf, 1940)	42, 247	800-1450	des	59
<i>Scatopsciara</i> (<i>Scatopsciara</i>) <i>atomaria</i> (Zetterstedt, 1851)	42, 188, 244	800-1811	tp	59
<i>Scatopsciara</i> (<i>Scatopsciara</i>) <i>edwardsi</i> Freeman, 1983	234	1100	e	59
<i>Sciara analis</i> Schiner, 1864	221	221	wes	168
<i>Sciara hemerobioides</i> (Scopoli, 1763)	221		po	168
Cecidomyiidae / 138				
<i>Anarella defecta</i> (Winnertz, 1870)	234	1100	ho	58
<i>Aprionus bidentatus</i> (Kieffer, 1894)	15, 212	1000-1330	e	58
<i>Lestremia cinerea</i> Macquart, 1826	42	800	hn	58
<i>Polydris adela</i> Pritchard, 1947	15, 212	1000-1330	h	58
<i>Monarda</i> (<i>Xylopriona</i>) <i>atra</i> (Meigen, 1804)	239, 250	1050-1500	h	58
<i>Campylomyza flavaipes</i> Meigen, 1818	82, 232, 249	1000-1400	h	58

Table 3. Continued.

<i>Neurohga verna</i> (Mamaev, 1963)	234	1150	♦	h	58
<i>Peronymia ramosa</i> (Edwards, 1938)	241	1100	♦	hoes	58
<i>Monepidosis bulgarica</i> Mamaev & Dimitrova, 1992	248	1550	♦	Ebg	154
<i>Neocolpodia paradoxa</i> Mamaev, 1964	212	1000	♦	e	58
<i>Porricondyla armata</i> Spungis, 1981	249	1400	♦	ee	58
<i>Porricondyla aurantiaca</i> Panelius, 1965	250	1500	♦	dp	58
<i>Porricondyla modesta</i> Spungis, 1981	234	1100	♦	ee	58
<i>Porricondyla nigripennis</i> (Meigen, 1830)	348	1550	♦	h	58
<i>Spungisomyia media</i> (Spungis, 1981)	241	1100	♦	ee	58
<i>Wimmerzia curvata</i> Panelius, 1965	42	800	♦	e	58
<i>Hithersia autumnalis</i> Mamaev, 1966	10	1600	♦	ee	58
<i>Lasiopiera arundinis</i> Schiner, 1854	171	730-800	♦	e	55, 56, 174
<i>Apionymia bergenstammi</i> (Wachtl, 1882)	221		♦	eswa	47, 55, 186, 187
<i>Arnoldiola gemmata</i> (Giraud, 1868)	225	1080	♦	e	55, 174
<i>Arnoldiola libera</i> (Kieffer, 1909)	121	750-800	♦	e	55, 174
<i>Spurgia euphorbiae</i> (Vallot, 1827)	3, 13, 32, 57, 58, 70, 156, 176, 180, 182, 210, 226, 234, 246	950-2108	♦	♦	ena, i, h, esca
<i>Coniophora niveldti</i> Dimitrova, 1992	242	1150	♦	Ebg	57
<i>Craneobia corni</i> (Giraud, 1863)	40, 42	770-800	♦	e	54, 55
<i>Cystiphora taraxaci</i> (Kieffer, 1888)	20, 239	950-1050	♦	e	55, 174
<i>Dasineura airae</i> (Kieffer, 1897)	39, 42	750-800	♦	e	55
<i>Dasineura asperulae</i> (F. Low, 1875)	248	1550	♦	cse, ? e	55, 174
<i>Dasineura auritiae</i> Rubsaamen, 1916	74, 151	1080-1150	♦	e	54, 55
<i>Dasineura corylina</i> (Kieffer, 1913)	118, 243	1200	♦	e	55
<i>Dasineura crataegi</i> (Wimmerz, 1853)	39, 118, 214, 215, 225, 233	750-1200	♦	e	54, 55, 166, 174
<i>Dasineura filicina</i> (Kieffer, 1889)	16, 136, 166, 231, 254	1400-1700	♦	dp	54, 55, 166, 174
<i>Dasineura filipendulae</i> (Kieffer, 1909)	243	1200	♦	e	55
<i>Dasineura fraxinea</i> Kieffer, 1907	50, 194	830-1350	♦	e	55, 174
<i>Dasineura fraxini</i> (Bremi, 1847)	50	1350	♦	ena	55
<i>Dasineura harisoni</i> (Bagnall, 1922)	39, 244	750-1250	♦	e	55, 56
<i>Dasineura hyperici</i> (Bremi, 1847)	3, 178, 239, 255	1050-2000	♦	e	55, 174
<i>Dasineura irregularis</i> (Bremi, 1847)	194	830	♦	e	55

Table 3. Continued.

<i>Dasineura kelneri</i> (Henschel, 1875)	122, 255	770-1430	◆	◆	wes	55, 166, 174
<i>Dasineura leguminicola</i> (Intrier, 1879)	12, 39	750-1100	●	◆	h, ? hat	55
<i>Dasineura oxyacanthae</i> Rubsaamen, 1914	39, 158	750-800	●	◆	e	55, 166
<i>Dasineura plicatrix</i> (Loew, 1850)	39, 196, 223, 255	750-1430	●	◆	ena	55, 56, 174
<i>Dasineura pieridicola</i> (Kieffer, 1901)	196	880	●	◆	e	55, 174
<i>Dasineura pustulans</i> (Rubsaamen, 1889)	39, 118, 233, 243, 253, 255	750-1430	●	◆	e	55, 56, 174
<i>Dasineura ranunculi</i> (Bremi, 1847)	39	750	●	◆	des	54, 55
<i>Dasineura rosae</i> (Bremi, 1847)	11, 20, 39, 68, 70, 77, 83, 119, 121, 164, 171, 187, 194, 200, 205, 215, 240, 243, 244, 245, 254	750-1770	●	◆	dp, ? h	54, 55, 166, 174
<i>Dasineura rubella</i> Kieffer, 1896	195	830	●	◆	e	55, 174
<i>Dasineura ruebsameni</i> (Kieffer, 1909)	23, 40, 116, 194, 196, 197, 210, 238, 243	770-1200	●	◆	e	55, 174
<i>Dasineura schulzei</i> Rubsaamen, 1917	214	1600	●	◆	e	55
<i>Dasineura sisymbrii</i> (Schrank, 1803)	20	950	●	◆	e	55, 174
<i>Dasineura szepietii</i> (Kieffer, 1909)	121, 196	750-880	●	◆	cse	55, 174
<i>Dasineura tiliiae</i> (Schrank, 1803)	2, 122, 226	800-1550	●	◆	dp, ? des	55, 166, 174
<i>Dasineura tortrix</i> (F. Low, 1877)	20, 239	950-1050	●	◆	e	55, 174
<i>Dasineura trifolii</i> (F. Low, 1874)	2, 39, 243	750-1550	●	◆	h	55, 174
<i>Dasineura tubularis</i> (Kieffer, 1909)	171, 213	800-1030	●	◆	cse	55
<i>Dasineura tympani</i> (Kieffer, 1909)	39, 40, 50, 195	750-1350	●	◆	e	54, 55, 174
<i>Dasineura ulmaria</i> (Bremi, 1847)	244, 253, 254, 255	1250-1430	●	◆	dp, ? des	54, 55, 166, 174
<i>Dasineura urticae</i> (Perris, 1840)	3, 22, 164, 181, 182, 235	1070-1650	●	◆	des, ? dp	54, 55, 174
<i>Dasineura viciae</i> (Kieffer, 1888)	136, 229, 254, 255	1350-1650	●	●	tp, ? dp	54, 55, 174
<i>Rabdophaga clavifex</i> (Kieffer, 1891)	254	1400	●	◆	dp	54, 55, 174
<i>Rabdophaga heterobia</i> (Loew, 1850)	31	920	●	◆	dp	55, 56
<i>Rabdophaga jaapi</i> Rubsaamen, 1916	254	1400	●	◆	e	55, 174

Table 3. Continued.

<i>Rabdophaga rosaria</i> (Loew, 1850)	6, 23, 39, 122, 123, 151, 155, 186, 194, 202, 224, 232, 253, 254	• • •	• • •	♦ ♦ ♦	tp	54, 55, 166, 174
<i>Rabdophaga saliciperra</i> (Dufour, 1841)	225, 234	1080-1100	•	♦	dp, ? tp h	54, 55
<i>Rabdophaga salicis</i> (Schrank, 1803)	122, 212, 254	770-1400	•	♦	dp	54, 55
<i>Rabdophaga terminalis</i> (Loew, 1850)	20, 56, 70, 74, 151, 225, 235, 245	950-1280	•	♦	des, ? dp	54, 55, 166, 174
<i>Didymomyia tiliacea</i> (Bremi, 1847)	16, 50, 81, 122, 123, 226, 231	800-1350	•	♦	dp	54, 55, 166, 174
<i>Dryomyza circinans</i> (Giraud, 1861)	122, 214	800-1000	•	♦	dp	54, 55, 174
<i>Geocrypta galii</i> (Loew, 1850)	11, 16, 68, 72, 122, 145, 157, 178, 198, 213, 231, 238, 239, 243, 244, 248	800-2000	• •	♦ ♦	? des, ? dp	54, 55, 166, 174
<i>Acericecis virina</i> (Kieffer, 1909)	50, 121, 154, 232, 243	750-1450	•	♦	cse, ? e	55, 56, 174
<i>Hartigiola annulipes</i> (Hartig, 1839)	42, 57, 80, 119, 232, 253, 254	800-1400	•	♦	dp	54, 55, 166, 174
<i>Iteomyia capreae</i> (Winnertz, 1853)	13, 18, 136, 151, 166, 229, 240, 253	770-1650	•	♦	tp	54, 55, 174
<i>Jaapiella floriperda</i> (F. Low 1888)	225	1080	•	♦	e	55, 56
<i>Jaapiella rubicundula</i> (Rubsamen, 1891)	242	1150	•	♦	e	55, 56
<i>Jaapiella veronicae</i> (Vallot, 1827)	2, 20, 122, 243, 254	750-1550	•	♦	e	55, 174
<i>Fabomyia medicaginis</i> (Rubsamen, 1912)	233	1120	•	♦	wesca	55, 56
<i>Janetia cerris</i> (Kollar, 1850)	109, 122, 172, 213	750-1030	•	♦	? dp	54, 55, 166, 174
<i>Janetia homocera</i> (F. Low, 1877)	210	1050	•	♦	cse	55
<i>Janetia nervicola</i> (Kieffer, 1909)	221	850	•	♦	csee	55, 174
<i>Janetia szepligetii</i> Kieffer, 1896	172	1550	•	♦	csean	55
<i>Janetia thymi</i> (Kieffer, 1888)	248	950	•	♦	e	55, 174
<i>Macrolabis lamii</i> Rubsamen 1916	20	950	•	♦	e	55, 174

Table 3. Continued.

<i>Macrolabis rhodophila</i> (Hardy, 1850)	6, 20, 68, 75, 83, 200, 240	800-1810	•	•	•	•	e	54, 55
<i>Macrolabis podagrariae</i> (Loew, 1850)	39, 223	750-950	•	•	•	•	? e	54, 55
<i>Mayetiola graminis</i> (Fourcroy, 1785)	51, 154, 156, 182	1000-1520	•	•	•	•	e	54, 55, 166, 174
<i>Mikomyia coryyi</i> (Kieffer, 1901)	12, 20, 40, 117, 121, 129, 136, 155, 196, 210, 214, 238, 243, 255	750-1680	•	•	•	•	can	55, 56, 174
<i>Oligotrophus juniperinus</i> (Linnaeus, 1758)	2, 5, 6, 16, 20, 62, 64, 65, 68, 72, 73, 102, 121, 125, 129, 145, 152, 177, 178, 191, 194, 198, 205, 214, 215, 231, 233, 235, 239, 245, 253	750-2270	•	•	•	•	e	54, 55, 166, 174
<i>Oligotrophus panteli</i> (Kieffer, 1898)	73, 133, 198, 235, 245	1100-1450	•	•	•	•	ena	55, 56, 166, 174
<i>Phagomyia lagicola</i> (Kieffer, 1901)	49, 243	1000-1200	•	•	•	•	e	55, 166, 174
<i>Physemoecis hartigi</i> (Liebel, 1892)	50, 226, 248	1130-1550	•	•	•	•	can	166, 55, 174
<i>Physemoecis ulmi</i> (Kieffer, 1909)	173	870	•	•	•	•	e	55
<i>Sacculononychia reaumurii</i> (Fremi, 1847)	40, 254	770-1400	•	•	•	•	e, ? cse	55, 174
<i>Semudobia betulae</i> (Winnertz, 1853)	20, 23, 155, 195, 205, 253	830-1450	•	•	•	•	tp, i, h	55, 174
<i>Semudobia skuharvae</i> Roskam, 1977	20, 23, 155, 173, 194, 205, 243, 253	830-1450	•	•	•	•	h	55, 174
<i>Semudobia tarda</i> Roskam 1977	20, 23, 155, 174, 195, 205, 234, 248, 253	830-1550	•	•	•	•	dp, i, h	55
<i>Wachtiella niebleri</i> Rubaamen, 1916	124, 178, 187, 253	1350-2000	•	•	•	•	wes	55
<i>Zygobius carpini</i> (F. Low, 1874)	121, 197	750-920	•	•	•	•	e	55, 174

Table 3. Continued.

<i>Mikiola orientalis</i> Kieffer, 1909	6, 12, 18, 23, 33, 58, 68, 71, 73, 95, 117, 122, 129, 150, 154, 156, 161, 164, 182, 198, 214, 229, 232, 236, 242, 243, 248, 253, 254, 255	•	•	•	•	•	ban	55, 166
<i>Kiefferia pericarpicola</i> (Bremi, 1847)	42, 118, 121, 223, 233	800-850	•	•	•	•	des, ? po	55, 56, 174
<i>Asphondyla baudysi</i> Vimmer, 1937	223, 253, 254	750-1200	•	•	•	•	e	55, 56, 174
<i>Asphondyla miki</i> Wachtl, 1880	234	1400	•	•	•	•	wes, ? h	55, 56, 174
<i>Asphondyla ononidis</i> F. Low, 187	39, 42	1100-1200	•	•	•	•	ena	55, 174
<i>Asphondyla scrophulariae</i> Schiner, 1836	31, 117, 209	750-850	•	•	•	•	cse	55, 174
<i>Asphondyla verbasci</i> (Vallot, 1827)	39, 42, 57, 94, 119, 156, 164, 178, 181, 223, 234, 242, 251, 253	860-1020	•	•	•	•	ena	55, 56, 174
<i>Placochela nigripes</i> (F. Low, 1877)	20	750-2000	•	•	•	•	cse	55, 174
<i>Schizomyia galiorum</i> Kieffer, 1889	50, 121, 181, 182, 223, 224	980	•	•	•	•	? wp	55, 56, 174
<i>Aphisoletes aphidimyzza</i> (Rondani, 1847)	245	750-1350	•	•	•	•	hna, ? sk	55, 174
<i>Aschistonyx carpiniculus</i> Rubsaamen, 1917	197	1280	•	•	•	•	e, ? cse	55, 174
<i>Climodiplosis cilicrus</i> (Kieffer, 1889)	121, 129, 135, 239, 244, 245,	920	750-1500	•	•	•	wes	54, 55, 174
<i>Contarinia barbichei</i> (Kieffer, 1890)	253, 255	253	1550	•	•	•	e	55
<i>Contarinia carpini</i> Kieffer, 1897	248	197, 210, 238	920-1100	•	•	•	e	55, 174
<i>Contarinia coryli</i> (Kaltenbach, 1859)	118, 164, 180, 243, 245	118, 164, 180, 1200-1350	1550	•	•	•	esca	55, 56, 174
<i>Contarinia fagi</i> Rubsaamen, 1921	129, 182, 253	1250-1350	920	•	•	•	e	55, 174
<i>Contarinia floriperda</i> Rubsaamen, 1917	136, 242	1150-1650	1200	•	•	•	e	55, 56
<i>Contarinia helianthemi</i> (Hardy, 1859)	243	20	950	•	•	•	e	55, 174
<i>Contarinia helianthemi</i> (Hardy, 1859)	243	243	1200	•	•	•	ena	55, 174

Table 3. Continued.

<i>Contarinia hypochoeridis</i> (Rubašaamen, 1891)	56, 182, 233, 245	1000-1350	◆	◆	e	55, 174
<i>Contarinia lamii</i> Kieffer, 1909	157	1580	◆	◆	e, ? cse	54, 55, 174
<i>Contarinia loti</i> (De Geer, 1776)	156	1500-1521	◆	◆	e	54
<i>Contarinia nasturtii</i> (Kieffer, 1888)	2	1550	◆	◆	can, i, h	55, 174
<i>Contarinia petioli</i> (Kieffer, 1898)	40, 68, 70, 74, 118, 122, 136, 155, 181, 182, 229, 242, 253, 254	770-1650	●	◆	des	54, 55, 166, 174
<i>Contarinia quercicola</i> (Rubašaamen, 1899)	172	850	●	◆	cse	55
<i>Contarinia tiliarum</i> (Kieffer, 1890)	22, 50, 182, 226, 248	1070-1550	●	◆	des, ? h	54, 55, 174
<i>Drisina glutinosa</i> Giard, 1893	50, 121, 129, 155, 242, 247	750-1450	●	◆	e	55, 174
<i>Harmandiola cavernosa</i> (Rubašaamen, 1899)	40, 74, 122, 130, 136, 196, 212, 229, 253, 254, 256	770-1650	●	◆	? wes, weswca	54, 55, 166, 174
<i>Harmandiola globuli</i> (Rubašaamen, 1889)	40, 122, 136, 155, 196, 212	770-1650	●	◆	wes, ? weswca	54, 55, 166,
<i>Harmandiola tremulae</i> (Winnertz, 1853)	122, 126, 136, 8, 63, 65, 102, 152, 175, 177, 187, 191, 212, 213	770-1650	●	◆	? esca	54, 55
<i>Hygrodiplosis vaccinii</i> (Kieffer, 1897)	33, 122, 172, 209, 212	1630-2290	●	◆	e, bm	55, 56
<i>Macrodiplosis pustularis</i> (Bremi, 1847)	33, 122, 172, 209, 212	800-1000	●	◆	? et	54, 55, 174
<i>Macrodiplosis roboris</i> (Hardy, 1854)	33, 144, 173, 209	870-950	●	◆	wesant	55, 56, 174
<i>Mycodiplosis gymnosporangii</i> Kieffer, 1904	23, 224	980-1080	●	◆	se	55
<i>Mycodiplosis melampsorae</i> (Rubašaamen, 1889)	254	1400	●	◆	e	55, 174
<i>Pteropidosis varimezovi</i> Mamaev & Dimitrova, 1998	84	1600	●	◆	Ebg	155
<i>Parallelodiplosis galliperda</i> (F. Low, 1889)	33	950	●	◆	e	55
<i>Puoniella pruni</i> Kaltenbach, 1872	20, 31, 181, 239	920-1320	●	◆	e	54, 55
<i>Thecodiplosis brachyntera</i> (Schwagrichen, 1835)	221	239	●	◆	e	47, 53, 55
<i>Tricholaba trifoliae</i> Rubsaamen 191	11, 39, 155, 248	750-1550	●	◆	wes	55

Table 3. Continued.

<i>Zeuxidiplosis giarai</i> (Kieffer, 1896)	2	1550	◆		e, i, hata	55, 174
Psychodidae / 2						
<i>Berdeniella manicata</i> (Tonnour, 1919)	38	700-1500	◆	cse	1	
<i>Pericoma (Pericoma) pseudoexquisita</i> Tonnour, 194	38	700-1500	◆	cse	1	
Trichoceridae / 1						
<i>Trichoera (Trichoera) hiemalis</i> (De Geer, 1776)	246	1300	◆	h	+++	
CULICOMORPHA						
Culicidae / 10						
<i>Anopheles (Anopheles) claviger</i> (Meigen, 1804)	221		wcp		44	
<i>Anopheles (Anopheles) maculipennis</i> Meigen, 1818	222	840	hoes, ? tp		43	
<i>Anopheles (Anopheles) plumbeus</i> Stephens, 1828	48	680	wp		43, 44	
<i>Ochlerotatus (Ochlerotatus) communis</i> (De Geer, 1776)	15	1330	?	h	43	
<i>Ochlerotatus (Ochlerotatus) pullatus</i> (Coquillett, 1904)	184	1495	?	h, ba	43, 44	
<i>Ochlerotatus (Ochlerotatus) punctor</i> (Kirby, 1837)	221		?	h	159	
<i>Ochlerotatus (Finlaya) geniculatus</i> (Olivier, 1791)	15, 48	680-1330	?	tp	43, 44	
<i>Culex (Culex) pipiens</i> Linnaeus, 1758	122	840	?	hnat	43	
<i>Culex (Culex) theileri</i> Theobald 1903	122	840	?	spp	43, 44	
<i>Culex (Maillotia) hortensis</i> Ficalbi, 1889	122	840	?	? wpo	43, 44	
Thaumaleidae / 1						
<i>Thaumalea testacea</i> Ruthe, 1831	50, 80	800-1350	◆	e	1	
Simuliidae / 35						
<i>Prosimilium (Prosimilium) fulvipes</i> (Edwards, 1921)	221		?	des	72	
<i>Prosimilium (Prosimilium) hirtipes</i> (Fries, 1824)	221		?	tp, ? h	130, 168	
<i>Prosimilium (Prosimilium) latimucro</i> (Enderlein, 1925)	208, 221	1800-2200	◆	e	129, 130	
<i>Prosimilium (Prosimilium) petrosum</i> Rubtsov, 1955	221		◆	see, ? em, mm	130	
<i>Prosimilium (Prosimilium) rufipes</i> (Meigen, 1830)	97, 207	1500-2000	◆	ena	129, 130, 172	
<i>Prosimilium (Prosimilium) tomosvaryi</i> (Enderlein, 1921)	202, 221	900-2000	◆	des	129, 130	
<i>Simulium (Bissodon) maculatum</i> (Meigen, 1804)	227	680	◆	hoes	172	
<i>Simulium (Helicella) latipes</i> Meigen, 1804	221		◆	tp	130	
<i>Simulium (Nevermannia) angustitarse</i> (Lundstrom, 1911)	221		◆	wcp, ? dp	130	
<i>Simulium (Nevermannia) brevidens</i> (Rubtsov, 1956)	221		◆	e	130	
<i>Simulium (Nevermannia) carpathicum</i> (Knoz, 1961)	221		◆	e	130	
<i>Simulium (Nevermannia) carthasiense</i> Grenier & Donier, 195	221		◆	e	130	
<i>Simulium (Nevermannia) codreanui</i> (Serban, 1958)	221		◆	e	130	
<i>Simulium (Nevermannia) costatum</i> Friederichs, 1920	221		◆	eanna	130	
<i>Simulium (Nevermannia) cryophilum</i> (Rubtsov, 1959)	204, 221	1000-2000	◆	eanna, ? tp	129, 130	
<i>Simulium (Nevermannia) latigonia</i> (Rubtsov, 1956)	221		◆	e	130	

Table 3. Continued.

<i>Simulium (Eusimulium) aureum</i> Fries, 1824	221			wes, ? h	130
<i>Simulium (Eusimulium) velatum</i> (Santos Abreu, 1922)	221		ena	130	
<i>Simulium (Wilhelmia) balcanicum</i> (Enderlein, 1924)	221		ean	130	
<i>Simulium (Wilhelmia) pseudoequinum</i> Seguy, 1921	221		spo	130	
<i>Simulium (Boophthora) erythrocephalum</i> (De Geer, 1776)	221		tp, ? dp	130	
<i>Simulium (Obichovia) auricomata</i> Meigen, 1818	221		ena, ? dp	130	
<i>Simulium (Simulium) argenteostriatum</i> Strobl, 1898	221		? cseña	130	
<i>Simulium (Simulium) argyreatum</i> Meigen 183	221	◆	e	130	
<i>Simulium (Simulium) baracorne</i> Smart, 1944	221		osee	130	
<i>Simulium (Simulium) bezzi</i> (Corti, 1914	221	900-1000	mwca	130	
<i>Simulium (Simulium) maximum</i> (Knob, 1961)	221		e	130	
<i>Simulium (Simulium) monticola</i> Friederichs, 192	221		ena	130	
<i>Simulium (Simulium) noelleri</i> Friederichs, 1920	221		wces	130	
<i>Simulium (Simulium) ornatum</i> Meigen, 1818	203, 221	900-910	tp	129, 130	
<i>Simulium (Simulium) reptans</i> (Linnaeus, 1758)	221		hoes, ? h	130	
<i>Simulium (Simulium) trifasciatum</i> Curtis, 1839	221		e, ? ena	129, 130	
<i>Simulium (Simulium) tuberosum</i> (Lundstrom, 1911)	221		h	130	
<i>Simulium (Simulium) variegatum</i> Meigen, 1818	203, 221	900-1100	wp	129, 130	
<i>Simulium (Simulium) verecundum</i> Stone & Jannback, 1955	203, 221	900-1800	h, bm	129, 130	
Ceratopogonidae / 4					
<i>Papomyia flavipes</i> (Meigen, 1804)	122	800	tp	201	
<i>Dasyhelea (Dasyhelea) flavifrons</i> (Guerin, 1833)	39, 40, 42, 50, 254, 256	700-1500	tp, ? hoes	188	
<i>Dasyhelea (Pseudoculicoides) sericata</i> (Winnertz, 1852)	122	800	ewca	201	
<i>Forcipomyia (Forcipomyia) bipunctata</i> (Linnaeus, 1767)	122	800	h	201	
Chironomidae / 8					
<i>Brilia longifurca</i> Kieffer, 1921	16		hop, ? h	158	
<i>Brilia bifida</i> (Kieffer, 1909)	77, 78, 222, 228	840-1500	po	172	
<i>Cricotopus (Cricotopus) algarum</i> (Kieffer, 1911)	79	720	e, ? wes	172	
<i>Cricotopus (Cricotopus) festivellus</i> (Kieffer, 1906)	16		h	158	
<i>Eukiefferiella similis</i> Goethghelu, 1939	230	2050	tp	52	
<i>Chironomus (Chironomus) plumosus</i> (Linnaeus, 1758)	122	770-830	hno	168	
<i>Chironomus (Chironomus) riparius</i> Meigen, 1804	227, 228	680-810	hn	172	
<i>Stictochironomus sticticus</i> (Fabricius, 1781)	226, 252	1100-1130	h	172	

Table 3. Continued.

Xylophagidae / 1									
<i>Xylophagus ater</i> Meigen, 1804	221								
STRATIOMYOMORPHA									
Stratiomyidae / 10									
<i>Beris clavipes</i> (Linnaeus, 1767)	41, 221	780-1000				e	3, 179		
<i>Beris morrisii</i> Dale, 1841	221					e	3		
<i>Chloromyia formosa</i> (Scopoli, 1763)	41, 223	780-1000				h	3, 167		
<i>Sargus caprarius</i> (Linnaeus, 1758)	221					h, ? i	179		
<i>Sargus flavipes</i> Meigen, 1822	122	770-830				tp	179		
<i>Sargus iridatus</i> (Scopoli, 1763)	80, 221	870-880				hoes	167, 168		
<i>Ophelontha viridula</i> (Fabricius, 1775)	122	770-830				tp, ? hop	179		
<i>Lastropa cana</i> (Meigen, 1822)	223	890-950				csee	167		
<i>Nemotelus</i> (<i>Nemotelus</i>) <i>pantherinus</i> (Linnaeus, 1758)	80, 122	770-880				tp, ? hp	168, 179		
<i>Eupachygaster tarsalis</i> (Zetterstedt, 1842)	122	770-830				et	179		
TABANOMORPHA									
Rhagionidae / 5									
<i>Chrysopilus cristatus</i> (Fabricius, 1775)	41	780-1000				e	168		
<i>Chrysopilus splendulus</i> (Meigen, 1820)	239, 244	150-1250				e	175		
<i>Rhagio conspicuus</i> Meigen, 1804	122, 239, 244	770-1250				e	175, 179		
<i>Rhagio scolopaceus</i> (Linnaeus, 1758)	80, 122, 223	770-950				wes	167, 168		
<i>Rhagio tringarius</i> (Linnaeus, 1758)	80, 122	770-880				wes	168		
Athericidae / 2									
<i>Atherix ibis</i> (Fabricius, 1798)	75, 221					des, h	167, 168		
<i>Ibista marginata</i> (Fabricius, 1781)	80, 221					e	167, 168		
Tabanidae / 21									
<i>Chrysops</i> (<i>Chrysops</i>) <i>caecutiens</i> (Linnaeus, 1758)	80	870-880				hoes, ? tp	46, 63, 168		
<i>Atylotus fulvus</i> (Meigen, 1804)	221					tp	46, 63, 165		
<i>Hybomitra distinguenda</i> (Verrall, 1909)	221					hoes, ? tp	165		
<i>Hybomitra montana</i> (Meigen, 1820)	223	890-950				tp, ? hoes	46, 63		
<i>Hybomitra pilosa</i> (Loew, 1858)	221					cse	46, 63, 168,		
<i>Hybomitra tropicalis</i> (Linnaeus, 1758)	221					e	46, 63		
<i>Tabanus autumnalis</i> Linnaeus, 1761	223	890-950				wcp	165, 168		
<i>Tabanus bromius</i> Linnaeus, 1758	221					wp	46, 63, 165, 168		
<i>Tabanus cordiger</i> Meigen, 1820	80, 221, 223	870-950				wp	46, 63, 168,		
<i>Tabanus lanatus</i> Fabricius 1794	80	870-880				mit	46, 63		
<i>Tabanus maculicornis</i> Zetterstedt, 1842	86	1090				wes	46, 63		
<i>Tabanus quauornotatus</i> Meigen, 1820	80	870-880				? wp	46, 63		

Table 3. Continued.

<i>Tabanus rectus</i> Loew, 1858	80, 223	870-950			nn	46, 63, 168,
<i>Tabanus spectabilis</i> Loew, 1858	221		◆		? mit	165
<i>Tabanus spodopterus</i> Meigen, 1820	223	890-950	●		? csean	46, 63, 165
<i>Tabanus tergestinus</i> Egger, 1859	221		◆		et, ? eswa	165
<i>Haematopota bigoti</i> Gobert, 1880	221		◆		canna	46, 63
<i>Haematopota crassicornis</i> Wahlberg, 1848	122	770-830	●		? wes	63, 46
<i>Haematopota italicica</i> Meigen, 1804	221		●		canna	46, 63, 168
<i>Haematopota pluvialis</i> (Linnaeus, 1758)	221	1500	●		wcp	165
<i>Philomyia graeca</i> (Fabricius, 1794)	221				csean	268
Bombyliidae / 13						
<i>Anastoechus nitidulus</i> (Fabricius, 1794)	221				tp	168
<i>Bombyella atra</i> (Scopoli, 1763)	221, 223	890-950	●		tp	168
<i>Bombylius (Bombylius) discolor</i> Mikan, 1796	122, 221	770-830	●		wp	168
<i>Bombylius (Bombylius) fimbriatus</i> Meigen, 1820	9	800-1000	●		wp, ? wcp	168
<i>Bombylius (Bombylius) fulvescens</i> Wiedemann in Meigen, 1820	80, 221	870-880	●		wp	168
<i>Bombylius (Bombylius) major</i> Linnaeus, 1758	80, 122, 221	770-880	●		ho	168
<i>Bombylius (Bombylius) venosus</i> Mikan, 1798	122	770-830	●		? wp	168
<i>Triplasius pictus</i> (Panzer, 1794)	41, 122, 223	780-1000	●		canna	168
<i>Conophorus virescens</i> (Fabricius, 1789)	41, 122, 223	780-1000	●		wcp	168
<i>Spongostylum isis</i> (Meigen, 1820)	221				nwca	168
<i>Exoprosopa capucina</i> (Fabricius, 1781)	223	890-950	●		? hoes	168
<i>Hemipenthes morio</i> (Linnaeus, 1758)	221, 223	890-950	●		h	168
<i>Hemipenthes velutina</i> (Meigen, 1820)	221				sp, ? wcp	168
Theridiidae / 2						
<i>Thereva cinifera</i> Meigen, 1830	75, 85	1020	●		wes	168
<i>Thereva marginula</i> Meigen, 1820	221, 20, 80, 223	870-980	●		e	167, 168
Asilidae / 22						
<i>Choerades fimbriata</i> (Meigen, 1820)	122	770-830	●		wes	168
<i>Laphria ephippium</i> (Fabricius, 1781)	221		●		e	168
<i>Laphria flava</i> (Linnaeus, 1761)	80, 221	870-880	●		po	168
<i>Dioclea bulgarica</i> Hradsky & Moucha, 1964	221	1500	●		Ebg, Er	94
<i>Dioclea flavipennis</i> Meigen, 1820	48, 80, 221, 223	680-950	●		esca	95, 167, 168
<i>Dioclea harcyniae</i> Loew, 1844	221		●		cse	95
<i>Dioclea oelandica</i> (Linnaeus, 1758)	41, 80	780-1000	●		e	95, 168
<i>Lepiarthus brevirostris</i> (Meigen, 1804)	221				e	95

Table 3. Continued.

<i>Leptogaster cylindrica</i> (De Geer, 1776)	41, 80, 221, 223	780-1000		tp	167, 168
<i>Leptogaster guttiventris</i> Zetterstedt, 1842	221		wes	wes	168
<i>Leptogaster pubicornis</i> Loew, 1847	80, 122, 221	770-880	ewca	ewca	167, 168
<i>Didysmachus picipes</i> (Meigen, 1820)	80, 221	870-880	wes	wes	95, 167, 168
<i>Dysmachus fuscipennis</i> (Meigen, 1820)	80, 122, 221, 223	770-950		? wes	95, 167, 168
<i>Dysmachus praemorsus</i> (Loew, 1854)	80	870-880	cse	cse	168
<i>Dysmachus stylifer</i> (Loew, 1854)	122, 221	770-830	cse	cse	167, 168
<i>Tolmerus cingulatus</i> (Fabricius, 1781)	20	950-980	eswa	eswa	168
<i>Erax barbanus</i> Scopoli, 1763	122, 223	770-950	e	e	168
<i>Eutolmus rufibarbis</i> (Meigen, 1820)	122, 221	770-830	tp	tp	167, 168
<i>Machimus rusticus</i> (Meigen, 1820)	80, 221	870-880	? wp	? wp	167, 168
<i>Neomochtherus pallipes</i> (Meigen, 1820)	221	1900	? h	? h	94
<i>Neomochtherus geniculatus</i> (Meigen, 1820)	122	770-830	e, ? cse	e, ? cse	168
<i>Philonicus albiceps</i> (Meigen, 1820)	221		tp	tp	168
Empididae / 29					
<i>Hilara chorica</i> (Fallén, 1816)	221		e	e	168
<i>Hilara fuscipes</i> (Fabricius, 1794)	221		? e	? e	168
<i>Hilara litorea</i> (Fallén, 1816)	50, 221, 244	1250-1350	e	e	25, 168
<i>Hilara pruinosa</i> Wiedemann in Meigen, 1822	221		cse	cse	168
<i>Hilara subpollinosa</i> Collin, 1927	20, 244	950-1250	e	e	25
<i>Empis (Euempis) tessellata</i> Fabricius, 1794	223	890-950	hop	hop	168
<i>Empis (Polyblepharis) fallax</i> Egger, 1860	223	890-950	des	des	168
<i>Empis (Kriempis) livida</i> Linnaeus, 1758	80, 223	870-950	e	e	168
<i>Empis (Lepiempis) grisea</i> Fallén, 1816	244	1250	e	e	25
<i>Empis (Lepiempis) maculata</i> Fabricius, 1781	20	950-980	cse	cse	25
<i>Empis (Lepiempis) rustica</i> Fallén, 1816	221		e	e	50
<i>Empis (Anacrostichus) histriana</i> Meigen, 1822	221		cse	cse	168
<i>Empis (Empis) aestiva</i> Loew, 1867	162	1300	e	e	25
<i>Empis (Empis) caudatula</i> Loew, 1867	148	1070-1080	e	e	25
<i>Empis (Empis) chioptera</i> Meigen, 1804	148	1070-1080	e	e	25
<i>Empis (Empis) decora</i> Meigen, 1822	10	1600	? csema	? csema	25
<i>Empis (Empis) nigripes</i> Fabricius, 1794	20	950-980	wes	wes	25
<i>Empis (Empis) pennipes</i> Linnaeus, 1758	148	1070-1080	e	e	25
<i>Empis (Empis) pilosa</i> Loew, 1867	125	1750	◆	◆	71
<i>Empis (Empis) rufiventris</i> Meigen, 1838	124, 125, 192	650-1800	◆	◆	25, 168

Table 3. Continued.

<i>Empis (Empis) woodi</i> Collin, 192	80	870-880		cse	25
<i>Empis (Coptophlebia) impenni</i> Strobl, 1902	20	950-980		cse	25
<i>Empis (Coptophlebia) volucris</i> Wiedemann in Meigen, 1822	117	1075	♦	cse	25
<i>Empis (Xanthempis) punctata</i> Meigen, 1804	122	770-830		e	168
<i>Empis (Xanthempis) trigramma</i> Wiedemann in Meigen, 182	122	770-830		e	168
<i>Empis (Lissempis) nigritarsis</i> Meigen, 1804	125	1750	♦	e	71
<i>Rhamphomyia (Rhamphomyia) siebecki</i> Strobl 1898	125	1750	♦	e	71
<i>Rhamphomyia (Rhamphomyia) sulcata</i> (Meigen, 1804)	10, 124	1600-1800		wcs	25
<i>Rhamphomyia (Pararhamphomyia) simplex</i> Zetterstedt, 1849	124	1800		e	25
Hybotidae / 5					
<i>Bicellaria spuria</i> (Fallén, 1816)	221		h	51	
<i>Bicellaria sulcata</i> (Zetterstedt, 1842)	221		des	25	
<i>Platypalpus excisus</i> (Becker, 1907)	221		e	51	
<i>Platypalpus major</i> (Zetterstedt, 1842)	192	650-900	♦	e	25
<i>Platypalpus pallidicornis</i> (Collin, 1926)	192	650-900	♦	e	25
Microphoridae / 2					
<i>Microphor anomalis</i> (Meigen, 1824)	221		des	51	
<i>Microphor holosericeus</i> (Meigen, 1804)	221		des	51	
Dolichopodidae / 13					
<i>Oncopygius distans</i> (Loew, 1857)	113	1700		cse	20
<i>Tetnaturus tumidulus</i> (Raddatz, 1873)	20	950-980	♦	ean	20
<i>Poecilobothrus nobilitatus</i> (Linnaeus, 1767)	122	770-830	♦	e	168
<i>Dolichopus arbustorum</i> Stannius, 1831	20, 239	950-1050		e	21
<i>Dolichopus argyrotarsis</i> Wahlberg, 1850	113	1700		e	21
<i>Dolichopus campestris</i> Meigen, 1825	20	950-980		tp	21
<i>Dolichopus lepidus</i> Staeger, 1842	20	950-980		po	21
<i>Dolichopus litorellus</i> Zetterstedt, 1852	20	950-980		po, ? hoes	21
<i>Dolichopus pennatus</i> Meigen, 1824	113	1700	♦	po	21
<i>Dolichopus plumipes</i> (Scopoli, 1783)	20	950-980	♦	hno	21
<i>Dolichopus simplex</i> Meigen, 1824	20, 239	950-1050		wes	21
<i>Dolichopus ungulatus</i> (Linnaeus, 1758)	20, 243	950-1200	♦	? h	21
<i>Medeira pinicola</i> Kowarz, 1877	19	1540-1550	♦	h	60
BRACHYCERA CYCLORHAPHA					
ASCHIZA					
<i>Phoridae / 38 (203)²</i>					
<i>Amigmatius franzii</i> Schmitz, 1950	14, 32, 67, 216	940-2020	•	♦	138, 140
<i>Amigmatius hubbockii</i> (Verrall, 1877)	32	940	♦	e	138, 140

Table 3. Continued.

<i>Anevrina thoracica</i> (Meigen, 1804)	6, 25, 44, 104, 114, 132, 163, 216	1040-2020	•	•	•	♦	h	27, 138
<i>Borophaga irregularis</i> (Wood, 1912)	24, 26	1200-1270	•	•	•	•	e	27, 138
<i>Chaetopleurophora erythronota</i> (Strobl, 1892)	110	1500	•	•	•	•	h	27
<i>Conicera dauci</i> (Meigen, 1830)	29, 32, 128, 132	940-1600	•	•	•	•	h	27, 138
<i>Diplonevra amphichaeta</i> (Schmitz, 1949)	21	1000	•	•	•	•	csee	27, 138
<i>Diplonevra funebris</i> (Meigen, 1830)	1, 32, 34, 114, 170	940-1360	•	•	•	•	hn	27, 138, 141
<i>Diplonevra lophochaeta</i> (Schmitz, 1927)	21	1000	•	•	•	•	csee	27
<i>Gymnophora arcuata</i> (Meigen, 1830)	1, 32	940-954	•	•	•	•	e	138, 141
<i>Gymnophora integralis</i> Schmitz, 1920	26, 32, 60, 114, 132, 167, 193	820-1360	•	•	•	•	des	138, 141
<i>Megaselia albocingulata</i> (Strobl, 1906)	32, 87	940-1006	•	•	•	•	e	138, 141
<i>Megaselia angusta</i> (Wood, 1909)	1, 89, 91	954-1120	•	•	•	•	? e	141
<i>Megaselia brevior</i> (Schmitz, 1924)	1, 32	940-954	•	•	•	•	e	138, 141
<i>Megaselia breviterga</i> (Lundbeck, 1920)	167, 251	900-1118	•	•	•	•	e	141
<i>Megaselia fusca</i> (Wood, 1909)	7, 25, 114, 142, 216	1270-2150	•	•	•	•	e	138, 139
<i>Megaselia halterata</i> (Wood, 1910)	32	940	•	•	•	•	h	138, 139
<i>Megaselia largifrons</i> Schmitz, 1939	167	900	•	•	•	•	e	141
<i>Megaselia pleuralis</i> (Wood, 1909)	1, 6, 7, 21, 25, 32, 105, 114, 126, 136, 167, 168	940-1900	•	•	•	•	h	138, 139, 141
<i>Megaselia posticata</i> (Strobl, 1898)	89, 167, 193	820-992	•	•	•	•	e	138, 141
<i>Megaselia pusilla</i> (Meigen, 1830)	7, 32, 114, 128, 132, 142, 193, 218, 241, 251	820-2150	•	•	•	•	h	138, 141
<i>Megaselia ruficornis</i> (Meigen, 1830)	25, 32, 35, 193	820-1270	•	•	•	•	h	138, 141
<i>Megaselia rufipes</i> (Meigen, 1804)	32, 193	820-940	•	•	•	•	sk	138, 139
<i>Megaselia scalaris</i> (Loew, 1866)	167	900	•	•	•	•	k	141
<i>Megaselia sublunata</i> (Wood, 1909)	114, 167	900-1360	•	•	•	•	e	138, 141
<i>Megaselia tenebricola</i> Schmitz, 1934	90, 91	1006-1120	•	•	•	•	e	141
<i>Metopina galeata</i> (Haliday, 1833)	32, 73	940-1006	•	•	•	•	e	138, 141

Table 3. Continued.

<i>Spiniphora bergenstammi</i> (Mik, 1864)	32, 39, 43 32, 52, 87, 89, 90, 114, 167, 168, 251	750-940 940-1118	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	hna cse, ? e e	27, 138 36, 91, 138, 139 27, 138
<i>Tripheba antrocola</i> (Schmitz, 1918)							
<i>Tripheba autumnalis</i> (Becker, 1901)	25, 105, 114 7, 21, 32, 64, 67, 104, 105, 106, 114, 142	1270-1550	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	e	27, 138
<i>Tripheba bicornuta</i> (Strobl, 1910)							
<i>Tripheba distinguenta</i> (Strobl, 1892)	17, 32, 45, 46, 96, 110, 114, 132, 167, 193, 214	820-1650	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	des	27, 138, 141
<i>Tripheba diadai</i> (Schmitz, 1918)	46, 54, 55, 96, 132	1080-1360	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	e, ? cse	27, 138
<i>Tripheba gracilis</i> (Wood, 1907)	18, 104, 105, 106, 169, 193	820-1750	● ● ● ●	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	e	27, 138
<i>Tripheba hyalinata</i> (Meigen, 1830)	26, 42, 88 24, 25, 167	850-1270 900-1270	● ● ● ●	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	e	138, 139, 141 138, 141
<i>Tripheba inaequalis</i> Schmitz, 1943	7, 25, 32, 65, 67, 109, 114, 141, 142, 143, 169, 176, 183, 211	940-2280 ● ● ● ●	● ● ● ●	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	des	27, 138
<i>Tripheba opaca</i> (Meigen, 1830)	25, 88, 113, 114, 132	964-1650 ● ● ● ●	● ● ● ●	◆ ◆ ◆ ◆	◆ ◆ ◆ ◆	e	138, 141
<i>Tripheba papillata</i> (Wingate, 1906)							
Pipunculidae / 7							
<i>Pipunculus campestris</i> Latreille, 1805	122, 221 221	770-830 ●			ho		3
<i>Pipunculus thomsoni</i> Becker, 1898					e		3
<i>Cephalosphaera (Cephalosphaera) furcata</i> (Egger, 1860)	221				e		3
<i>Cephalops (Cephalops) aeneus</i> Falten, 1810	221				e		3
<i>Tomosvaryella coquilletti</i> (Kertész, 1907)	242	1150	●	◆	ho		28
<i>Tomosvaryella geniculata</i> (Meigen, 1824)	80	870-880	●	◆	e		168
<i>Tomosvaryella syriatica</i> (Meigen, 1824)	117, 221	1075	●	◆	ho		3, 28
Syrphidae / 130							
<i>Dasytrophus albostriatus</i> (Fallén, 1817)	221				lp		4
<i>Dasytrophus friuliensis</i> (van der Goot, 1960)	221				hoes		4
<i>Dasytrophus venustus</i> (Meigen, 1822)	221	1500-1600	●	●	h		4, 168
<i>Epistrophus ochrostoma</i> (Zeitstedt, 1849)	221				h		4
<i>Episyphus halteatus</i> (De Geer, 1776)	246	1300	●	●	poa		+++

Table 3. Continued.

<i>Meligramma cincta</i> (Fallén, 1817)	221				dp		168
<i>Meliscaeva auricollis</i> (Meigen, 1822)	221				wp		4
<i>Eupeodes lapponicus</i> (Zetterstedt, 1838)	221				h		4
<i>Eupeodes corollae</i> (Fabricius, 1794)	41, 221	780-1000	●		ppia		4, 168
<i>Eupeodes latifasciatus</i> (Macquart, 1829)	221		◆		ho		168
<i>Eupeodes luniger</i> (Meigen, 1822)	80	870-880	●		ho		168
<i>Eupeodes nitens</i> (Zetterstedt, 1843)	80, 221	870-880	●		lp		4, 65
<i>Parasyrphus lineolus</i> (Zetterstedt, 1843)	221				h		4
<i>Parasyrphus malinellus</i> (Collin, 1952)	221				des		4
<i>Scaeva pyrastri</i> (Linnaeus, 1758)	221				ho		4
<i>Scaeva selenitica</i> (Meigen, 1822)	80, 221	870-880	●		po		4, 168
<i>Sphaerophoria philanthus</i> (Meigen, 1822)	221		◆		h		4
<i>Sphaerophoria scripta</i> (Linnaeus, 1758)	41, 221	780-1000	●		ho		4, 168
<i>Sphaerophoria taeniatata</i> (Meigen, 1822)	221		◆		lp		2, 4
<i>Syrphus ribesii</i> (Linnaeus, 1758)	221				h		4, 168
<i>Syrphus torvus</i> Osten-Sacken, 1875	221				ho		4
<i>Syrphus vitripennis</i> Meigen, 1822	122, 221	770-830	●		ho		4, 168
<i>Xanthogramma citrofasciatum</i> (De Geer, 1776)	80, 221	870-880	●		weswca		4, 65
<i>Xanthogramma pedissequum</i> (Harris, 1776)	221				lp		168
<i>Baccha elongata</i> (Fabricius, 1775)	70, 246	1200-1300	●	◆	h		+++
<i>Chrysotoxum bicinctum</i> (Linnaeus, 1758)	80	870-880	●	◆	lp		168
<i>Chrysotoxum cautum</i> (Harris, 1776)	41	780-1000	●		weswca		4
<i>Chrysotoxum elegans</i> Loew, 1841	221				e		4, 168
<i>Chrysotoxum fasciolatum</i> (De Geer, 1776)	221				h		4
<i>Chrysotoxum festivum</i> (Linnaeus, 1758)	221, 223	890-950	●	◆	po		4, 168
<i>Chrysotoxum impressum</i> Becker, 1921	221				se		4
<i>Chrysotoxum lineare</i> (Zetterstedt, 1819)	123	800	●		e		65
<i>Chrysotoxum octomaculatum</i> Curtis, 1837	41	780-1000	●		wes		4
<i>Chrysotoxum verna</i> Loew, 1841	41, 80, 225	780-1080	●	◆	esca		4, 168
<i>Chrysotoxum verralli</i> Collin, 1940	221				wces		4
<i>Melanostoma mellinum</i> (Linnaeus, 1758)	41, 221	780-1000	●	◆	h		4, 168
<i>Platycleirus albimanus</i> (Fabricius, 1781)	221				ho		4
<i>Platycleirus ambiguus</i> (Fallén, 1817)	221				ho		4
<i>Platycleirus clypeatus</i> (Meigen, 1822)	221				h		4
<i>Platycleirus scutatus</i> (Meigen, 1822)	41, 80	780-1000	●		h		4, 168
<i>Platycleirus tarsalis</i> (Schummel, 1836)	221				h		4
<i>Paragus albifrons</i> (Fallén, 1817)	221				lp		168

Table 3. Continued.

<i>Paragus bicolor</i> (Fabricius, 1794)	225	1080	•	♦	h	65
<i>Paragus tibialis</i> (Fallén, 1817)	221		•		ho	4
<i>Heringia herringi</i> (Zetterstedt, 1843)	123	800	•	♦	esca	4
<i>Heringia pubescens</i> (Delucchi & Pschom-Walcher, 1955)	221		•		h	4
<i>Pipiza bimaculata</i> Meigen, 1822	123, 221	800	•	♦	wesca	4, 65
<i>Pipiza fasciata</i> Meigen, 1822	221		•		des	4
<i>Pipiza lugubris</i> (Fabricius, 1775)	223	890-950	•	♦	des	168
<i>Pipiza noctiluca</i> (Linnaeus, 1758)	122	770-830	•	♦	esca	65
<i>Pipiza quadrivittata</i> (Panzer, 1804)	221		♦		h	4
<i>Pipizella virens</i> (Fabricius, 1805)	20, 41, 80	870-1000	•	♦	tp	4, 168
<i>Cheilosia aerea</i> Dufour, 1848	225	1080	•	♦	cse	65
<i>Cheilosia albipila</i> Meigen, 1838	80, 221	870-880	•	♦	wces	4, 65,
<i>Cheilosia albularis</i> (Meigen, 1822)	122	770-830	•	♦	h	4
<i>Cheilosia antiqua</i> (Meigen, 1822)	122	770-830	•	♦	e	168
<i>Cheilosia barbata</i> Loew, 1857	80, 122	770-880	•	♦	e	168
<i>Cheilosia cynocephala</i> Loew, 1840	221				wes	4
<i>Cheilosia frontalis</i> Loew, 1857	221				e	4
<i>Cheilosia gagatæ</i> Loew, 1857	122	770-830	•	♦	cse	4
<i>Cheilosia grossa</i> (Fallén, 1817)	225	1080	•	♦	po	65
<i>Cheilosia illustrata</i> (Harris, 1780)	221				hoes	4, 65
<i>Cheilosia impressa</i> Loew, 1840	221				hoes, ? esca	4, 168
<i>Cheilosia melanopa</i> (Zetterstedt, 1843)	221				e	168
<i>Cheilosia melanura</i> (Becker, 1894)	221				wces, ? des	4
<i>Cheilosia montana</i> Egger, 1860	221				wes	4
<i>Cheilosia morio</i> (Zetterstedt, 1838)	221				wces	4
<i>Cheilosia mutabilis</i> (Fallén, 1817)	221				wcp	4
<i>Cheilosia pagana</i> (Meigen, 1822)	80	870-880	•	♦	h	168
<i>Cheilosia proxima</i> (Zetterstedt, 1843)	221				hoes	4
<i>Cheilosia rhynchos</i> Egger, 1860	221				e, ? cse	4
<i>Cheilosia ruficollis</i> (Becker, 1894)	221				? e	4
<i>Cheilosia rufimana</i> (Becker, 1894)	221				e	4
<i>Cheilosia ruralis</i> (Meigen, 1822)	42, 221	800-850	•		? tp	4, 168
<i>Cheilosia sahlbergi</i> (Becker, 1894)	221				e	4
<i>Cheilosia semifasciata</i> (Becker, 1894)	221				e	4
<i>Cheilosia soror</i> (Zetterstedt, 1843)	221				tp	168
<i>Cheilosia variabilis</i> (Panzer, 1798)	221	80, 122, 225	770-1080	•	wcp	4, 168
<i>Cheilosia vulpina</i> (Meigen, 1822)					e	65, 168

Table 3. Continued.

<i>Ferdinandea cuprea</i> (Scopoli, 1763)	80	870-880				hop, ? tp	168
<i>Rhingia rostrata</i> (Linnaeus, 1758)	80	870-880			wes		168
<i>Volucella bombylans</i> (Linnaeus, 1758)	221			h		4, 46, 65, 168	
<i>Volucella pellucens</i> (Linnaeus, 1758)	221			po		4, 168	
<i>Volucella zonaria</i> (Poda, 1761)	122, 221	770-830		tp		168, 179	
<i>Pipizella viduata</i> (Linnaeus, 1758)	42, 225	800-1080		e		4, 168	
<i>Hammerschmidia ferruginea</i> (Fallén, 1817)	221			h		4	
<i>Lejogaster metallina</i> (Fabricius, 1781)	42	800-850		tp		4	
<i>Lejogaster tarsata</i> (Meigen, 1822)	221			esca, ? tp		168	
<i>Orthonevra brevicornis</i> (Loew, 1843)	221			wes		4	
<i>Orthonevra nobilis</i> (Fallén, 1817)	221			esca		4	
<i>Riponnensia longicornis</i> (Loew, 1843)	42	800-850	♦	hom		4	
<i>Neoascia annexa</i> (Müller, 1776)	221			e		4	
<i>Neoascia meticulosa</i> (Scopoli, 1763)	221			esca		4	
<i>Neoascia podagraria</i> (Fabricius, 1775)	221			wcp		4	
<i>Sphingina clunipes</i> (Fallén, 1816)	80, 221, 225	870-1080	•	des		4, 65,	
<i>Sphingina elegans</i> Schummel, 1843	221			e		4	
<i>Sphingina latifrons</i> Egger, 1865	221			e		4	
<i>Arctophila bombyiforme</i> (Fallén, 1810)	221			e		168	
<i>Sericomyia lappona</i> (Linnaeus, 1758)	221			hoes		4	
<i>Eumerus olivaceus</i> Loew, 1848	221			se		4	
<i>Eumerus strigatus</i> (Fallén, 1817)	221			ha, ? 1		168	
<i>Merodon aeneus</i> Meigen, 1822	221	1750		ena		4, 46, 61, 62, 66	
<i>Merodon albifrons</i> Meigen, 1822	221, 225	1080	•	csena		168	
<i>Merodon avidus</i> (Rossi, 1790)	80, 221	870-880	•	ena		4, 168	
<i>Merodon caerulescens</i> Loew, 1869	221	1750		seenaa		46, 61, 62, 66	
<i>Merodon cinereus</i> (Fabricius, 1794)	221			cse		4, 168	
<i>Merodon crymensis</i> Paramonov, 1925	221			csecan		4	
<i>Merodon ruficornis</i> Meigen, 1822	221			csena, ? ena		4	
<i>Merodon rufus</i> Meigen, 1838	225	1080	•	? wp		168	
<i>Psarus abdominalis</i> (Fabricius, 1794)	122	770-830	•	e		179	
<i>Eristalis alpina</i> (Panzer, 1798)	221			esca		4	
<i>Eristalis arbustorum</i> (Linnaeus, 1758)	80, 221	870-880	•	ho		4, 65, 168	
<i>Eristalis horticola</i> (De Geer, 1776) [<i>E. lineata</i> (Harris, 1776)]	41	780-1000	•	po		4	
<i>Eristalis intricaria</i> (Linnaeus, 1758)	225	1080	•	hoes, ? esca		65	
<i>Eristalis ilgorum</i> Egger, 1858	221			e, ? cse		168	
<i>Eristalis rupium</i> Fabricius, 1805	41	780-1000	•	h		4	

Table 3. Continued.

<i>Eristalis similis</i> (Fallén, 1817)	221	1650				wp	4
<i>Eristalis tenax</i> (Linnaeus, 1758)	91, 170	1000-1240	♦			k	+++
<i>Helophilus pendulus</i> (Linnaeus, 1758)	221				hoes		4
<i>Helophilus trivittatus</i> (Fabricius, 1805)	221				tp		168
<i>Blera fallax</i> (Linnaeus, 1758)	221			hoes			4
<i>Criorhina astilica</i> (Fallén, 1816)	221				e		4
<i>Syrphus pipiens</i> (Linnaeus, 1758)	41, 221	780-1000			hno, ? sk		4, 168
<i>Brachypalpus laphyformis</i> (Fallén, 1816)	80	870-880	♦		e		168
<i>Xylota ignava</i> (Panzet, 1798)	221				tp		4
<i>Xylota segnis</i> (Linnaeus, 1758)	221				h		4
<i>Xylota syriarum</i> (Linnaeus, 1758)	221			hoes			4
<i>Microdon analis</i> (Macquart, 1842)	123	800	♦		tp		65
<i>Microdon devius</i> (Linnaeus, 1761)	221				wces		4
<i>Microdon mutabilis</i> (Linnaeus, 1758)	221			hoes			4
SCHIZOPHORA							
ACALYPTARATA							
Micropidae / 1							
<i>Micropæza corrigiolata</i> (Linnaeus, 1767)	20	950-980	♦		h	168	
Conopidae / 8							
<i>Conops (Conops) flavipes</i> Linnaeus, 1758	221				tp		46, 67, 168
<i>Physoccephala vittata</i> (Fabricius, 1794)	85	1020	♦		wcp		46, 67
<i>Myopa buccata</i> (Linnaeus, 1758)	221		♦		tp		3
<i>Myopa occulta</i> Wiedemann, 1824	122	770-830			tp, ? hop		46, 67, 179
<i>Myopa testacea</i> (Linnaeus, 1767)	221	1400	♦		hop		3, 46, 168
<i>Thecophora atra</i> (Fabricius, 1775)	221				po		46, 67, 168
<i>Sicus ferrugineus</i> (Linnaeus, 1761)	41, 80, 221	870-1400	♦		po		3, 46, 67, 168
<i>Dalmannia punctata</i> (Fabricius, 1794)	41	780-1000	♦		canit		3
Lonchaeidae / 1							
<i>Lonchaea chorea</i> (Fabricius, 1781)	20	950-980	♦		h	168	
Otitidae / 1							
<i>Seopiella vibrans</i> (Linnaeus, 1758)	9	800-1000	♦		h	168	
Platystomatidae / 1							
Tephritidae / 9							
<i>Anomoia purmunda</i> (Harris, 1780)	122, 221	770-830	♦		? tp		46, 47, 68
<i>Chaetorellia jaceae</i> (Robineau-Desvoidy, 1830)	61, 221	960-1000	♦		wp		47, 168
<i>Orellia stictica</i> Gmelin, 1790	225, 221	1080	♦		e		46, 68

Table 3. Continued.

<i>Oxya flavipennis</i> (Loew, 1844)	221			wces	46, 168
<i>Campiglossa absinthii</i> (Fabricius, 1805)	122, 221	770-830		tp, ? wcp	46, 168
<i>Campiglossa tessellata</i> (Loew, 1844)	61, 221	960-1000	wcp	wcp	46, 68
<i>Rhagoletis alternata</i> (Fallén, 1814)	122	770-830	wes, ? e	wes, ? e	46, 47, 68
<i>Chaetostomella cylindrica</i> (Robineau-Desvoidy, 1830)	61, 221	960-1000	wp	wp	46, 68
<i>Tephritis vespertina</i> (Loew, 1844)	80, 221	870-880	ena	ena	46, 68
Chamaemyiidae / 6					
<i>Parochraphila (Euestelia) coronata</i> (Loew, 1858)	221			tp	14
<i>Parochraphila (Euestelia) transversa</i> Hennig, 1938	22	1070		see	14
<i>Chamaemyia subjuncorum</i> Tanasijshuk, 1970	221			dp, ? tp	13
<i>Chamaemyia submontana</i> Beschovski, 1994	71, 37	1300-1600		cse	12, 13
<i>Chamaemyia syriatica</i> Collin, 1966	221			e	13
<i>Leucopis (Leucopis) gliphinivora</i> Tanasijshuk, 1958	8, 244	1250-2000		ho	14
Dryomyzidae / 1					
<i>Dryomyza flaveola</i> (Fabricius, 1794)	253	1300		e	145
Scionyzidae / 2					
<i>Coremacera amoena</i> (Loew, 1853)	122	770-830		csean	168
<i>Tetanocera ferruginea</i> Fallén, 1820	221			h	168
Sepsidae / 1					
<i>Sepsis flavimana</i> Meigen, 1826	221			ho	168
Agromyzidae / 19					
<i>Agromyza nana</i> Meigen, 1830	221			wpo	6
<i>Agromyza idaeiana</i> Hardy, 1853	221			po	6
<i>Agromyza pseudoreptans</i> Nowakowski, 1967	221			h	6
<i>Agromyza reptans</i> Fallén, 1823	221			ho	6
<i>Amauromyza (Cephalomyza) labiatarum</i> (Hendel, 1920)	221			e	6
<i>Cerodontha (Phytomyza) flavocingulata</i> (Strobl, 1909)	116	900	♦	h	48
<i>Liriomyza centaureae</i> Hering, 1927	221			e	6
<i>Liriomyza puelia</i> (Meigen, 1830)	221			e	6
<i>Aulagromyza similis</i> (Brischke, 1880)	221			e	6
<i>Pseudonapomyza europaea</i> Spencer, 1973	133	1000	♦	h	48
<i>Phytomyza albipennis</i> Fallén, 1823	244	1200	♦	ena	48
<i>Phytomyza angelicae</i> Kaltenbach, 1872	221			e	6
<i>Phytomyza chaerophylli</i> (Kaltenbach, 1856)	221			e	6
<i>Phytomyza fallaciosa</i> Brischke, 1880	221			e	6
<i>Phytomyza obscurella</i> Fallén, 1823	221	1100	♦	e	6
<i>Phytomyza pastinacae</i> Hendel 1923	221			h	6

Table 3. Continued.

<i>Phytomyza sphondylinivora</i> Spencer, 1957	221			e	6
<i>Phytomyza tetrasicha</i> Hendel, 1927	221			eswa	6
<i>Phytomyza tussilaginis</i> Hendel, 1925	221			h	6
Oponyzidae / 6					
<i>Oponyza florum</i> (Fabricius, 1794)	4, 6, 20, 48, 54, 162, 165, 192, 242	650-1850	◆	e	24
<i>Oponyza germinationis</i> (Linnaeus, 1758)	117, 165, 192, 242	650-1500	◆	h	24
<i>Oponyza perrei</i> Mesnil, 193	20, 117, 242	950-1150	◆	h	24
<i>Oponyza punctella</i> Fallén, 1820	4	1830-1850	◆	e	24
<i>Geomyza marineki</i> Drake, 1992	192, 242	750-1150	◆	e	24
<i>Geomyza tripunctata</i> Fallén, 1823	133, 24, 15, 244	1000-1330	◆	h	24
Periscelididae / 1					
<i>Periscelis (Myodris) annulata</i> (Fallén, 1813)	170	1240	◆	h	16
Braulidae / 1					
<i>Braula coeca</i> Nitzsch, 1818	41	780-1000	◆	hata	64
Carnidae / 3					
<i>Meonera alpina</i> Hennig, 1948	15	1000-1300	◆	csee	17, 22
<i>Meonera carpathica</i> Papp, 1977	20, 162, 239	950-1300	◆	e	17, 22
<i>Meonera flavifacies</i> Collin, 1930	20	950-980	◆	h	17, 22
Milichiidae / 1					
<i>Phyllomyza securicornis</i> Fallén, 1823	20	950-980	◆	h	17, 22
Chloropidae / 79					
<i>Aphanotrigonum nigripes</i> (Zetterstedt, 1848)	20, 50	950-1350	◆	wces	22
<i>Aphanotrigonum parahastatum</i> Dely-Draskovits, 1981	192	650-900	◆	mwca	22
<i>Conioscinella frontella</i> (Fallén, 1820)	6, 21, 244	1000-1830	◆	hoes	22
<i>Dicraeus (Dicraeus) ingratus</i> (Loew, 1866)	22, 117, 192, 221	650-1070	◆	h	11, 22
<i>Dicraeus (Dicraeus) nigropilosus</i> Becker, 1910	21, 243	1000-1200	◆	cset	7, 22
<i>Dicraeus (Dicraeus) rapax</i> (Haliday, 1838)	20	950-980	◆	e	22, 23
<i>Dicraeus (Dicraeus) tibialis</i> (Macquart, 1835)	20, 116, 242	950-1150	◆	ha	22, 23
<i>Dicraeus (Paroedesiella) vagans</i> (Meigen, 1838)	21	1000	◆	Ebg.	22
<i>Elachiptera cornuta</i> (Fallén, 1820)	9, 21 4, 63, 190, 192, 242	650-2200	◆	? hop	22, 23
<i>Elachiptera diastema</i> Collin, 1946	2, 63	1550-2150	◆	ena	15, 18, 22

Table 3. Continued.

<i>Elachiptera scrobiculata</i> (Strobl, 1901)	192	700-800	•	•	des	18, 22
<i>Elachiptera tuberculifera</i> (Corti, 1909)	6, 221	1810-1840	•	•	hop	22, 23
<i>Incertella albipalpis</i> (Meigen, 1830)	20, 63, 116, 192, 239	700-2150	•	•	hoes	22, 23
<i>Melanochaeta pubescens</i> (Thalhammer, 1898)	53, 70	900-1200	•	•	wp	22
<i>Microceris trigonella</i> (Duda, 1933)	192	700-800	•	•	hoes	22
<i>Oscinella (Oscinella) alopecuri</i> Balachovsky & Mesnil, 1935	2, 20, 116, 134, 192, 239	650-1550	•	•	cse	18, 22
<i>Oscinella (Oscinella) cariciphila</i> Collin, 1946	22, 139	1070-2190	•	•	wces	22
<i>Oscinella (Oscinella) frit</i> (Linnaeus, 1758)	4, 8, 15, 20, 63, 72, 82, 116, 139, 161, 165, 226, 236, 239	800-2150	•	•	k	22, 23
<i>Oscinella (Oscinella) maura</i> Fallén, 1820	20, 239	950-1050	•	•	wes	22, 23
<i>Oscinella (Oscinella) nigerrima</i> (Macquart, 1835)	6, 20, 71, 116, 137, 161, 165, 239	800-1820	•	•	e	22, 23
<i>Oscinella (Oscinella) nitidissima</i> (Meigen, 1838)	20, 116, 239	900-1050	•	•	h	22, 23
<i>Oscinella (Oscinella) phlei</i> Narishuk, 1955	20, 116, 161, 192, 239	800-1100	•	•	e	18, 22
<i>Oscinella (Oscinella) pusilla</i> (Meigen, 1830)	4, 6, 15, 20, 134, 239	900-1840	•	•	hop	22, 23
<i>Oscinella (Oscinella) vastator</i> (Curtis, 1845)	20, 116, 192, 243	800-1200	•	•	e	22, 23
<i>Oscinella (Oscinella) ventricosa</i> Narishuk, 1955	221				wes	22, 23
<i>Oscinimorpha arcuata</i> (Duda, 1932)	63, 242	1150-2150	•	•	? eswa	22, 23
<i>Oscinimorpha minutissima</i> (Strobl, 1900)	20, 243, 192	800-1200	•	•	? wp	22
<i>Oscinomima cognatum</i> (Meigen, 1830)	21, 221	1000	•	•	hoes	11, 22
<i>Trachysiphonella pygmaea</i> (Meigen, 1838)	117	1000	•	•	wes	18
<i>Trachysiphonella ruficeps</i> (Macquart, 1835)	21, 116, 134, 161, 207, 221, 235, 243	1000-1800	•	•	e	22, 23
<i>Trachysiphonella scutellata</i> von Röser, 1840	21, 221	1000	•	•	eca	22, 23
<i>Tricimba (Narishukiella) cincta</i> (Meigen, 1830)	6, 24, 32, 116, 170	940-1820	•	•	h	22, 23
<i>Tricimba (Narishukiella) humeralis</i> (Loew, 1858)	32, 54	940-1000	•	•	hop	22
<i>Camarota curvipennis</i> (Latreille, 1805)	24, 221	1200	•	•	ena	22, 23

Table 3. Continued.

Table 3. Continued.

<i>Chlorops (Chlorops) troglodytes</i> (Zetterstedt, 1848)	4, 6, 21, 63, 72, 120, 147, 161, 181, 207, 219, 226, 239, 254	• • • •	•	•	•	•	wces	11, 22, 23
<i>Diptotaxa messoria</i> (Fallén, 1820)	21, 192, 221, 244	800-1250	•	•	•	•	h	22, 23
<i>Lasiostoma brevisyrpata</i> Dely-Draskovits, 1977	9, 221	600-1000	•	•	•	•	e	22, 23
<i>Lasiostoma herpini</i> (Guérin-Méneville, 1843)	21, 32, 48, 192, 221, 235, 243	680-1200	•	•	•	•	tp	22, 23
<i>Meromyza (Meromyza) athletica</i> Fedoseva, 1974	4, 21, 221, 226, 243	1000-1840	•	•	•	•	csee	22, 23
<i>Meromyza (Meromyza) bohemica</i> Fedoseva, 1962	21, 221, 243	1000-1200	•	•	•	•	e	22, 23
<i>Meromyza (Meromyza) femorata</i> Macquart, 1835	21, 71, 192, 221	1000-1300	•	•	•	•	e	22, 23
<i>Meromyza (Meromyza) meigeni</i> Narshuk, 2006	204, 225	1000-1100	•	•	•	•	wes	22
<i>Meromyza (Meromyza) nigristeta</i> Fedoseva, 1960	21, 221	1000	•	•	•	•	wces	22, 23
<i>Meromyza (Meromyza) nigriventris</i> Macquart, 1835	4, 15, 21, 37, 48, 63, 161, 221, 243	680-2100	•	•	•	•	h	22, 23
<i>Meromyza (Meromyza) obtusa</i> Peterfi, 1961	21, 37, 161, 221	900-1550	•	•	•	•	e	22, 23
<i>Meromyza (Meromyza) ornata</i> (Wiedemann, 1817)	42, 48	680-800	•	•	•	•	hoes, ? esca	22
<i>Meromyza (Meromyza) plurisetia</i> Péterfi, 1961	15, 221, 235, 243	1000-1200	•	•	•	•	wces	22, 23
<i>Meromyza (Meromyza) rohdendorfi</i> Fedoseva, 1974	221, 243	1200	•	•	•	•	e	9, 11, 22, 23
<i>Meromyza (Meromyza) rufa</i> Fedoseeva, 1962	2, 21, 192, 221, 243	800-1550	•	•	•	•	e	22, 23
<i>Meromyza (Meromyza) saltatrix</i> (Linnaeus, 1761)	15, 21, 37, 120, 133, 147, 161, 192, 221, 226, 235, 243	800-1880	•	•	•	•	h	22, 23
<i>Meromyza (Meromyza) triangulina</i> Fedoseeva, 1960	21, 37, 147, 207, 221, 249	1000-1950	•	•	•	•	e	9, 11, 22, 23
<i>Meromyza (Meromyza) variegata</i> Meigen 1830	207	1900	•	•	•	•	? e	22
<i>Meromyza (Meromyza) zahvatkini</i> Fedoseva, 1960	21, 48, 63, 120, 181, 221, 243	680-2100	•	•	•	•	des	9, 11, 22, 23
<i>Parectecephala longicornis</i> (Fallén, 1820)	221, 222	840	•	•	•	•	esva	22, 23

Table 3. Continued.

<i>Thaumatomyia glabra</i> (Meigen, 1830)	21, 192, 221, 236, 243	700-1200	◆	◆	h	22, 23
<i>Thaumatomyia hollandica</i> Andersson, 1966	4, 21, 192, 221, 226, 236, 243	800-1830	◆	◆	wces	22, 23
<i>Thaumatomyia notata</i> (Meigen, 1830)	6, 32, 179, 188, 221, 236, 239	940-1840	◆	◆	ppt	22, 23
<i>Thaumatomyia rufa</i> (Macquart, 1835)	71, 120, 192, 239, 241	800-1300	◆	◆	hop	22
<i>Trichaeurina pubescens</i> (Meigen, 1830)	20, 221	700-950	◆	◆	et, ? ewca	11, 22, 23
Heleomyzidae / 2						
<i>Heleomyza (Heleomyza) serrata</i> (Linnaeus, 1758)	217	1100	◆	◆	h	36
<i>Heteromyza rotundicornis</i> (Zetterstedt, 1846)	87	992	◆	◆	e	36
Ephydriidae / 29						
<i>Psilopa marginella</i> Fallén, 1823	24	1200	◆	◆	e	19, 29
<i>Psilopa nigritella</i> Stenhammar, 1844	71	1300	◆	◆	wcp	29
<i>Psilopa nitidula</i> (Fallén, 1813)	6, 24, 63, 70, 117, 179, 243, 254	1100-2100	◆	◆	pat	29
<i>Psilopa obscuripes</i> Loew, 1860	42, 48	680-800	◆	◆	wp	29
<i>Psilopa polita</i> (Macquart, 1835)	4, 6, 34, 70, 117, 134, 161, 192, 243	800-1840	◆	◆	dp	29
<i>Psilopa stackelbergi</i> Narshuk, 1970	117	1000-1100	◆	◆	e	19, 29
<i>Hydrellia albabilobris</i> (Meigen, 1830)	192	700-900	◆	◆	ena	19, 30
<i>Hydrellia griseola</i> (Fallén, 1813)	117, 132, 179, 192, 239	700-1350	◆	◆	sk	30
<i>Hydrellia maura</i> Meigen, 1838	221, 239	1000-1050	◆	◆	wp, ? ena	19, 30
<i>Hydrellia subalbiceps</i> Collin, 1966	21	1000	◆	◆	ena	19, 30
<i>Notiphila nigricornis</i> Stenhammar, 1844	21	1000	◆	◆	esca	19, 30
<i>Hecamedoides unispinosus</i> (Collin, 1943)	192, 221	700-900	◆	◆	hnat	19, 32
<i>Nostima picta</i> (Fallén, 1813)	21, 221, 236, 239	1000-1150	◆	◆	h, ? hn	19, 31
<i>Philygria femorata</i> (Stenhammar, 1844)	221	1000	◆	◆	e	19, 93
<i>Philygria interstincta</i> (Fallén, 1813)	21, 221	1000	◆	◆	e	19, 31
<i>Philygria posticata</i> (Meigen, 1830)	21, 117, 221	950-1100	◆	◆	des	19, 31
<i>Philygria stictica</i> (Meigen, 1830)	15, 21, 192, 236, 239	700-1300	◆	◆	e	31

Table 3. Continued.

<i>Philygria vittipennis</i> (Zetterstedt, 1838)	161, 179, 221 221, 239	1000-1245 1000	♦	h	19, 31
<i>Hyadina guttata</i> (Fallén, 1813)	•	♦	tp	19, 31	
<i>Pelina similis</i> Papp, 1974	6, 192	800-1800	♦	et	19, 33
<i>Parydra (Chaeoapnaea) fossarum</i> (Haliday, 1833)	24, 189	1200-2000	♦	h	19, 33
<i>Parydra (Chaeoapnaea) oblitterata</i> Duda, 1942	21, 22	1000-1100	♦	e	19, 33
<i>Parydra (Parydra) coarctata</i> (Fallén, 1813)	21, 113, 137, 192, 221	900-1810	♦	tp, ? hop	19, 33
<i>Parydra (Parydra) cognata</i> Loew, 1860	24	1200	♦	ena, ? wp	33
<i>Parydra (Parydra) littoralis</i> (Meigen, 1830)	21, 93, 113, 126, 179	1000-1870	♦	ena, ? wp	19, 33
<i>Limnella quadrata</i> (Fallén, 1813)	24	1200	♦	dp ? h	19, 33
<i>Lamproscatella sibilans</i> (Haliday, 1833)	4, 6, 21, 117, 138, 239	800-2000	♦	h	19, 33
<i>Scatella (Scatella) paludum</i> (Meigen, 1830)	21, 22	1000-1100	♦	hpin	33
<i>Scatella (Scatella) tenuicosta</i> Collin, 1930	21, 33, 64, 117, 138, 161, 192, 236	800-2200	♦	hat	33
CALYPTATA					
Hippoboscidae / 2					
<i>Hippobosca equina</i> Linnaeus 1758	70, 249	1200-1400	♦	ppia	+++
<i>Melophagus ovinus</i> (Linnaeus, 1758)	71	1300	♦	k	+++
Scathophagidae / 2					
<i>Phrosia albabilis</i> (Fabricius, 1805)	122	770-830	♦	e	168
<i>Scathophaga stercoraria</i> (Linnaeus, 1758)	122, 221	770-830	♦	hat	168
Anthomyiidae / 9					
<i>Paragle coerulescens</i> (Strobl, 1893)	254	1400-1420	♦	cse	145
<i>Anthomyia pluvialis</i> (Linnaeus, 1758)	221			poa	168
<i>Cothythea nigricans</i> Robineau-Desvoidy, 1830	21, 22	1000-1100	♦	wcp	168
<i>Delta cardui</i> (Meigen, 1826)	254	1400-1420	♦	h	145
<i>Delta florilega</i> (Zetterstedt, 1845)	122	770-830	♦	h	168
<i>Egle parva</i> Robineau-Desvoidy, 1830	254	1400-1420	♦	des, ? dp	145
<i>Hydrophoria lancifer</i> (Harris, 1780)	80	870-880	♦	h	168
<i>Hydrophoria linogrisea</i> Meigen, 1826	254	1400-1420	♦	e, ? des	145
<i>Hylemya variata</i> (Fallén, 1823)	221			wes	168
Fanniidae / 2					
<i>Fannia canicularis</i> (Linnaeus, 1761)	41	780-1000	♦	k	143
<i>Fannia scalaris</i> (Fabricius, 1794)	41	780-1000	♦	lptn	143
Muscidae / 53					

Table 3. Continued.

<i>Muscina levida</i> (Harris, 1780)	41	780-1000	•	•	•	•	h	143
<i>Muscina stabulans</i> (Fallén, 1817)	41	780-1000	•	•	•	•	k	143
<i>Azelia triquestra</i> (Wiedemann, 1817)	6	1810-1840	♦	♦	♦	♦	h	144
<i>Thricops aculeipes</i> (Zetterstedt, 1838)	221	1900	•	•	•	•	wes	148
<i>Thricops cunctans</i> (Meigen, 1826)	221	1500-2000	•	•	•	•	hoes	148
<i>Thricops genarum</i> (Zetterstedt, 1838)	221, 254	1400-1420	•	•	•	•	des	146, 148
<i>Thricops longipes</i> (Zetterstedt, 1845)	221	900-2000	•	•	•	•	hoes	148
<i>Thricops nigrifrons</i> (Robineau-Desvoidy, 1830)	6, 41	800-1840	•	•	•	•	west	144
<i>Thricops nigritellus</i> (Zetterstedt, 1838)	221	1200-2000	•	•	•	•	wesan	148
<i>Thricops semicinerinus</i> (Wiedemann, 1817)	199, 221	1590	•	•	•	•	wesanca	144, 148
<i>Drymena alpicola</i> (Rondani, 1871)	6, 199	1590-1840	•	•	•	•	h	144, 148
<i>Drymena fasciculata</i> (Stein, 1916)	6, 199	1590-1840	•	•	•	•	se, ? m	144, 148
<i>Drymena vicana</i> (Harris, 1780)	199, 221	1590	•	•	•	•	esanca	144, 148
<i>Hydrotaea borussica</i> Stein, 1899	221, 254	1400-1420	•	•	•	•	eit	146
<i>Hydrotaea dentipes</i> (Fabricius, 1805)	122	770-830	•	•	•	•	hno	168
<i>Hydrotaea meteorica</i> (Linnaeus, 1758)	122, 221	770-830	•	•	•	•	h, ? ho	148, 168
<i>Hydrotaea pandellei</i> Stein, 1899	221	221	•	•	•	•	esanca	148
<i>Hydrotaea similis</i> Meade, 1887	221	1810-1840	•	•	•	•	tp	148
<i>Potamia littoralis</i> Robineau-Desvoidy, 1830	6	1810-1840	•	•	•	•	ho	147
<i>Mesembriina meridiana</i> (Linnaeus, 1758)	221	221	•	•	•	•	tp	168
<i>Musca autumnalis</i> De Geer, 1776	221	800-2200	•	•	•	•	hpt	168
<i>Musca domestica</i> Linnaeus, 1758	221	800-2200	•	•	•	•	k	143
<i>Musca tempestiva</i> Fallén, 1817	122	770-830	•	•	•	•	ppt	179
<i>Morellia simplex</i> (Loew, 1857)	80, 122	770-880	•	•	•	•	tp	168, 179
<i>Pyrellia vivida</i> Robineau-Desvoidy, 1830	41, 122	770-1000	•	•	•	•	po	143, 179
<i>Dasyphora penicillata</i> (Egger, 1865)	41, 221	780-1000	•	•	•	•	wp	168
<i>Dasyphora pratorum</i> (Meigen, 1826)	41	780-1000	•	•	•	•	wp	143
<i>Stomoxys calcitrans</i> (Linnaeus, 1758)	21, 68	1000-1250	•	•	•	•	k	149, +++
<i>Phaonia angelicae</i> (Scopoli, 1763)	16	1300-1800	•	•	•	•	tp	144, 200a
<i>Phaonia errans</i> (Meigen, 1826)	9, 221	600-1000	•	•	•	•	h	168
<i>Phaonia falleni</i> Michelsen, 1977	221	800-1600	•	•	•	•	hoes	148, 168
<i>Phaonia incana</i> (Wiedemann, 1817)	221	800-1800	•	•	•	•	po	148, 168, 200a
<i>Phaonia ligabris</i> (Meigen, 1826)	6	1810-1840	•	•	•	•	h	147, 148
<i>Phaonia pallida</i> (Fabricius, 1787)	80	870-880	•	•	•	•	? wp	168, 200a
<i>Phaonia serva</i> (Meigen, 1826)	6	1810-1840	•	•	•	•	h	147, 200a
<i>Helina annosa</i> (Zetterstedt, 1838)	221	221	•	•	•	•	h	146, 148
<i>Helina caecataeformis</i> Schnabl & Dziedzicki, 1911	221	221	•	•	•	•	wcp	148

Table 3. Continued.

<i>Helina evecta</i> (Harris, 1780)	221				hptn, ? hpt		148, 168
<i>Helina latitarsis</i> Ringdahl, 1924	221				ean		1489
<i>Helina montana</i> (Rondani, 1866)	85, 221	1020			? wpo		147, 148
<i>Helina obscurata</i> (Meigen, 1826)	221				h		148
<i>Helina reversio</i> (Harris, 1780)	122	770-830			h, ? ho		168
<i>Mydaea nebulosa</i> (Stein, 1893)	199	1590			des		146, 148
<i>Hebecnema fumosa</i> (Meigen, 1826)	221				po		148
<i>Hebecnema umbratica</i> (Meigen, 1826)	122	770-830			ho		168
<i>Hebecnema vespertina</i> (Fallén, 1823)	221				h		148, 168
<i>Spilogona ballica</i> (Ringdahl, 1918)	221	700-1500			h		148
<i>Spilogona carbonella</i> (Zetterstedt, 1845)	221				ean		148, 168
<i>Spilogona dispar</i> (Fallén, 1823)	221, 254	1400-1420			wesan		144, 148
<i>Limnohora riparia</i> (Fallén, 1824)	50, 80	870-1350			wp		1
<i>Lispe consanguinea</i> Loew, 1858	21	1000			tp		168
<i>Lispe tentaculata</i> (De Geer, 1776)	21	1000			hno		168
<i>Coenosia tigrina</i> (Fabricius, 1775)	21	1000			h		168
Calliphoridae / 15							
<i>Bellardia vulgaris</i> (Robineau-Desvoidy, 1830)	39, 42	750-800	•		h		116, 117
<i>Calliphora vicina</i> Robineau-Desvoidy, 1830	68	1250	♦		k		+++
<i>Calliphora vomitoria</i> (Linnaeus, 1758)	221				ha		131
<i>Cynomya mortuorum</i> (Linnaeus, 1761)	221				h		168
<i>Lucilia caesar</i> (Linnaeus, 1758)	239	1000-1050	•		hop		+++
<i>Lucilia richardsi</i> Collin, 1926	41	780-1000	•		e		116, 117
<i>Lucilia sericata</i> (Meigen, 1826)	41	780-1000	•		k		116, 117
<i>Melinda gentilis</i> Robineau-Desvoidy, 1830	122	770-830	•		hop, ? h		70
<i>Onesia austriaca</i> Villeneuve, 1920	41, 122	770-1000	•		cse		116, 117
<i>Onesia floralis</i> Robineau-Desvoidy, 1830	6, 221	1820			e		70, 168
<i>Phormia regina</i> (Meigen, 1826)	122	770-830	•		ha		116, 117
<i>Pollenia amentaria</i> (Scopoli, 1763)	225	1000			wp		70, 168
<i>Pollenia rufa</i> (Fabricius, 1794)	122, 201	800-1096	•		hoa		70
<i>Pollenia vera</i> Jacentkovsky, 1936	39, 42	750-800	•		csee		116
<i>Rhyncomyia cyanescens</i> (Loew, 1844)	39, 50, 155	750-1450	•		hom		70, 116, 117
Sarcophagidae / 25							
<i>Metopia campestris</i> (Fallén, 1810)	122	770-830	•		h		116, 117
<i>Brachycoma devia</i> (Fallén, 1820)	221				h		116
<i>Nectia halterata</i> (Panzer, 1798)	43, 201	900-1096	•		ena		69, 116, 117
<i>Wohlfahrtia vigil</i> (Walker, 1849)	221				h		168

Table 3. Continued.

<i>Blaesoxipha (Servista) erythrura</i> (Meigen 1826)	201, 221	1096			69, 116
<i>Ravinia pernix</i> (Harris, 1780)	42, 43	750-800	po, ? ppt	116, 117	
<i>Sarcophaga (Helicophagella) agnata</i> Rondani, 1860	221	1500	e	171	
<i>Sarcophaga (Helicophagella) melanura</i> Meigen, 1826	201	1096	ho		69
<i>Sarcophaga (Helicophagella) noverca</i> Rondani, 1860	221	1700	e	171	
<i>Sarcophaga (Helicophagella) roselleri</i> Böttcher, 1912	221		des	171	
<i>Sarcophaga (Thysocnema) incisilobata</i> Pandelle, 1896	42, 43	750-800	wp		116, 117
<i>Sarcophaga (Thysocnema) kentejana</i> (Rohdendorf, 1937)	221		esca, am		171
<i>Sarcophaga (Heteronychia) benaci</i> Böttcher, 1913	42, 43, 221	750-800	cse		69, 116, 117, 171
<i>Sarcophaga (Heteronychia) infantilis</i> Böttcher, 1913	221		e		151, 171
<i>Sarcophaga (Heteronychia) dissimilis</i> Meigen, 1826	221		des		168
<i>Sarcophaga (Heteronychia) bulgarica</i> (Enderlein, 1936)	221		can		46, 118
<i>Sarcophaga (Heteronychia) haemorrhoa</i> Meigen, 1826	42, 43	750-800	e		116, 117
<i>Sarcophaga (Bereza) africana</i> (Wiedemann, 1824)	42, 43, 221	750-800	sk		116, 117, 168
<i>Sarcophaga (Parasarcophaga) albiceps</i> Meigen, 1826	221	750-1420	poa		69, 116, 117, 168
<i>Sarcophaga (Robineauella) caerulescens</i> Zetterstedt, 1838	43, 254		h		69, 116, 117
<i>Sarcophaga (Sarcophaga) bergi</i> Rohdendorf, 1937	155	1450	seenan		46, 116, 117
<i>Sarcophaga (Sarcophaga) carnaria</i> (Linnaeus, 1758)	221		esca		168
<i>Sarcophaga (Sarcophaga) subvicina</i> Rohdendorf, 1937	42, 43	750-800	et		116, 117
<i>Sarcophaga (Sarcophaga) vitoschana</i> (Enderlein, 1936)	43	750-800	Ebg		69, 73, 116, 117
Rhinophoridae / 1					
<i>Steniva atramentaria</i> (Meigen, 1824)	82	1000	e		168
Hypodermatidae / 1					
<i>Hypoderma bovis</i> (Linnaeus, 1758)	35	1120	k		+++
Tachinidae / 208					
<i>Exorista (Exorista) larvarum</i> (Linnaeus, 1758)	20, 33, 41, 54, 68, 115, 118, 143, 167, 172, 225, 242, 244	850-1250	◆	◆	hop
<i>Exorista (Podotachina) grandis</i> (Zetterstedt, 1844)	167, 241	900-1100	◆	◆	
<i>Exorista (Thrycolyga) nova</i> (Rondani, 1859)	35	1120	◆	◆	ess
<i>Exorista (Adenia) mimula</i> (Meigen, 1824)	61, 144	900-1000	◆	◆	nmt
<i>Exorista (Adenia) rustica</i> (Fallén, 1810)	41, 123	800-1000	◆	◆	tp, ? hop
<i>Chetogena filipalpis</i> Rondani, 1859	44, 45, 57	1000-1100	◆	◆	hop
<i>Chetogena obliquata</i> (Fallén, 1810)	35	1120	◆	◆	nmt
					101, +++
					tp

Table 3. Continued.

<i>Diplostichus janitrix</i> (Hartig, 1838)	251	1120					des		+++
<i>Parasetigena silvestris</i> (Robineau-Desvoidy, 1863)	254	1400					des		+++
<i>Phorocera assimilis</i> (Fallén, 1810)	9, 17, 236	900-1400					des		101, 168, +++
<i>Phorocera grandis</i> (Rondani, 1859)	212	1000					dp		+++
<i>Phorocera obscura</i> (Fallén, 1810)	147, 233	1000-1120					des		+++
<i>Bessa selecta</i> (Meigen, 1824)	54, 71	1000-1300					hoes		+++
<i>Meigenia dorsalis</i> (Meigen, 1824)	235, 242, 249	1150-1400					hoes		101, 116, 117, +++
<i>Meigenia mutabilis</i> (Fallén, 1810)	6, 10, 21, 35, 41, 58, 72, 115, 138, 182, 192, 198	800-1850					wcp		101, 185, +++
<i>Zaira cinerea</i> (Fallén, 1810)	21, 39, 59, 61, 72	750-1400					tp		101, 116, 117, +++
<i>Medina collaris</i> (Fallén, 1820)	167	900					hoes		+++
<i>Medina luctuosa</i> (Meigen, 1824)	28	1100-1200					hoes		+++
<i>Lecanipa bicincta</i> (Meigen, 1824)	35	1100-1120					wces		+++
<i>Admontia maculisauma</i> (Zetterstedt, 1859)	2, 7	1550-1900					e		+++
<i>Oswaldia muscaria</i> (Fallén, 1810)	28	1100-1200					des		101
<i>Oswaldia spectabilis</i> (Meigen, 1824)	172, 242	850-1150					e		101
<i>Lomachantha parra Rondani, 1859</i>	34	1200					et		+++
<i>Erynniopsis antennata</i> (Rondani, 1861)	115, 170	910-1240					? hom, h*		+++
<i>Blondellia nigripes</i> (Fallén, 1810)	4, 6, 14, 15, 18, 39, 40, 57, 66, 70, 71, 103, 124, 125, 136, 152, 161, 170, 182, 189, 254, 255						tp, h*		101, 116, 117, +++
<i>Compsilura concinna</i> (Meigen, 1824)	9, 21, 33, 41, 55, 57, 58, 118, 162	700-1400					hoes, h*		101, 185, +++
<i>Vibrissina turrita</i> (Meigen, 1824)	242	1150					dp		101
<i>Acemya acuticornis</i> (Meigen, 1824)	205	1350					ess		+++
<i>Smidtia amoena</i> (Meigen, 1824)	236	1200					hoes		+++
<i>Winthemia cruentata</i> (Rondani, 1859)	221						hoes		101, 168
<i>Winthemia erythrura</i> (Meigen, 1838)	80	870-880					hoes		101, 168
<i>Winthemia quadripustulata</i> (Fabricius, 1794)	39, 40, 41, 242	750-1150					h		101, 116, 117, +++
<i>Nemorilla floralis</i> (Fallén, 1810)	70	1200					tp, ? hop		+++

Table 3. Continued.

<i>Aplomyia confinis</i> (Fallén, 1820)	41, 131, 172, 236, 254	850-1400	◆	◆	hop	101, 116, 117, +++, 101
<i>Phebellia nigripalpis</i> (Robineau-Desvoidy, 1847)	242	1150	◆	◆	des	101
<i>Tlephusa cinctina</i> (Rondani, 1859)	41	780-1000	●	●	ess	101, 116, 117
<i>Epicampocera succincta</i> (Meigen, 1824)	35, 234, 243	1100-1200	◆	◆	tp	101, 116, 117
<i>Phryxe nemea</i> (Meigen 1824)	6, 256	1500-1800	◆	◆	hoes	101
<i>Phryxe prima</i> (Brauer & Bergenstamm, 1889)	35	1120	◆	◆	mt	+++
<i>Phryxe vulgaris</i> (Fallén, 1810)	4, 19, 35, 152, 174, 236, 242, 254	1100-1800	◆	◆	h	101, +++, +++
<i>Pseudoperichaeta nigrolineata</i> (Walker, 1853)	10, 24, 74, 130	1150-1600	◆	◆	des	168, +++, +++
<i>Lydella stabulans</i> (Meigen, 1824)	32, 232	940-1080	●	●	wes	+++
<i>Cadurciella tritacnata</i> (Rondani, 1859)	254	1400-1450	◆	◆	des	+++
<i>Drino atricapilla</i> (Robineau-Desvoidy, 1830)	198, 251	1100-1320	◆	◆	sp	+++
<i>Drino inconspicua</i> (Meigen, 1830)	130, 149	1000-1300	●	●	wces	+++
<i>Drino lota</i> (Meigen, 1824)	61, 246	1000-1300	◆	◆	pat	+++
<i>Drino vicina</i> (Zetterstedt, 1849)	71	1300	◆	◆	wces	+++
<i>Huebneria affinis</i> (Fallén, 1810)	4, 56, 234, 246	1000-1840	●	●	ess	+++
<i>Carcelia (Carcelia) bombylans</i> Robineau-Desvoidy, 1830	24, 242	1150-1200	●	●	des	101, +++, +++
<i>Carcelia (Carcelia) gnava</i> (Meigen, 1824)	50, 61, 161, 174	900-1350	◆	◆	des	+++
<i>Carcelia (Carcelia) lucorum</i> (Meigen, 1824)	55, 72	1260-1400	●	●	tp	+++
<i>Carcelia (Eurycea) tibialis</i> (Robineau-Desvoidy, 1863)	115, 221	910	◆	◆	tp	101, 50, +++, +++
<i>Akomyia capillata</i> (Rondani, 1859)	31	920	●	●	hom	+++
<i>Platymya fimbriata</i> (Meigen, 1824)	101, 189	2000-2100	●	●	tp, bm	+++
<i>Eumea linearicornis</i> (Zetterstedt, 1844)	105	1550	●	●	hoes	+++
<i>Myxeroritops blonderi</i> (Robineau-Desvoidy, 1830)	42, 79	720-800	●	●	e, ? des	+++
<i>Zenilia dolosa</i> (Meigen, 1824)	122	770-830	●	●	hoes	150
<i>Zenilia libatrix</i> (Panzer, 1798)	10	1600	●	●	hoes	+++
<i>Clemelis pullata</i> (Meigen, 1824)	14, 120	1500-1830	●	●	wcp	+++
<i>Pales pavida</i> (Meigen, 1824)	15, 35, 39, 83, 131, 147	750-1400	●	●	hop	101, 116, 117
<i>Bothria frontosa</i> (Meigen, 1824)	24, 91, 144, 241	920-1200	●	●	hoes	101
<i>Ceromasia rubrifrons</i> (Macquart, 1834)	41, 50, 53, 130	800-1350	●	●	hoes	101, 116, 117, +++, 101
<i>Allophorocera ferruginea</i> (Meigen, 1824)	82, 113, 242, 245, 246, 256	1000-1650	●	●	hoes, ? des	101, 150, +++, 101
<i>Allophorocera pachystyla</i> (Macquart, 1850)	189	2000	●	●	e, m	+++

Table 3. Continued.

<i>Eurysthaea scutellaris</i> (Robineau-Desvoidy, 1848)	20, 239	950-1050		e	+++
<i>Eldia morio</i> (Fallén, 1820)	28, 172, 235	850-1200	◆	tp	198, 199, +++
<i>Sturmia bella</i> (Meigen, 1824)	15, 33, 70, 121	800-1200	◆	po	+++
<i>Blepharipa pratinensis</i> (Meigen, 1824)	28, 172	850-1200	◆	tp, h*	+++
<i>Masicera sihatica</i> (Fallén, 1810)	21, 28, 54, 144, 154, 241	920-1200	◆	e	101, +++
<i>Prosopaea nigricans</i> (Egger, 1861)	70, 147, 209	860-1200		wcp	+++
<i>Gaedea connexa</i> (Meigen, 1824)	35, 235	1120	◆	e	168, +++
<i>Thelymorphia marmorata</i> (Fabricius, 1805)	41	780-1000		wces	116, 117
<i>Baumhaueria goniiformis</i> (Meigen, 1824)	24, 28	1100-1200	◆	wp	101
<i>Gonia bimaculata</i> Wiedemann, 1819	35	1120	◆	atm	+++
<i>Gonia capitata</i> (De Geer, 1776)	2, 48, 71, 90, 152, 242, 245	680-1800	◆	wcp	101, 116, 117, +++
<i>Gonia ornata</i> Meigen, 1826	42, 48	680-800		wcp	+++
<i>Pseudogonia rufifrons</i> (Wiedemann, 1830)	31, 70	920-1200	◆	ppta	+++
<i>Spathanzania hebes</i> (Fallén, 1820)	122	770-830	◆	ho	101, 116, 117
<i>Tachina (Tachina) grossa</i> (Linnaeus, 1758)	70, 71, 72, 246, 254	1200-1450	◆	hoes	101, 116, 117, +++
	3, 5, 6, 9, 15, 21, 30, 34, 48, 54, 70, 88, 104, 113, 117, 130, 132, 144, 161, 167, 174, 182, 199, 209, 212, 232, 244, 245				
<i>Tachina (Eudoromyia) fera</i> (Linnaeus, 1761)		680-1810	●	hop	101, 116, 117, 168, +++
<i>Tachina (Eudoromyia) nuptia</i> (Rondani, 1859)		3, 24, 36, 41, 54, 59, 61, 68, 70, 81, 85, 105, 119, 121, 128, 130, 144, 152, 165, 172, 201, 229, 232, 236, 242, 254, 255	●	hop	101, 116, 117, 150, 168, +++
<i>Tachina (Servilia) hurida</i> (Fabricius, 1781)	131, 161	1300-1550		tp	+++
<i>Tachina (Echinogaster) praeceps</i> Meigen, 1824	33, 35 115, 146	950-1120 910-920		wp wp	+++

Table 3. Continued.

Table 3. Continued.

<i>Eurithia caesia</i> (Fallén, 1810)	153, 172, 242, 255	850-1450		♦	hoes	101, +++, +++
<i>Gymnocheta viridis</i> (Fallén, 1810)	115, 146, 167, 202, 225, 244	900-1250		♦	wces	+++
<i>Hyalurgus lucidus</i> (Meigen, 1824)	3, 6, 104, 152, 165, 231, 248, 255	1400-1850		♦	wces, bm	97, 101, +++, +++
<i>Zophomyia temula</i> (Scopoli, 1763)	144, 222, 246, 255	840-1450		♦	tp	168, +++, +++
<i>Cleonice callida</i> (Meigen, 1824)	119	1250	♦	♦	des	+++
<i>Cleonice nitiduscila</i> (Zetterstedt, 1859)	192	650-900	♦	♦	wes	182
<i>Loewia brevifrons</i> (Rondani, 1856)	35, 221	1120	♦	♦	nm	101, 116, 117, +++
<i>Loewia phaeoptera</i> (Meigen, 1824)	55	1260	♦	♦	e	101, 168
<i>Loewia setibarba</i> Egger, 1856	221		♦	♦	cse	+++
<i>Pelatachina tibialis</i> (Fallén, 1800)	130	1300	♦	♦	hoes	101, +++, +++
<i>Macquartia chalonota</i> (Meigen, 1824)	130, 242, 244 82, 170, 221, 232, 242, 244	1150-1300	♦	♦	wes	101, +++, +++
<i>Macquartia dispar</i> (Fallén, 1820)	33	1000-1300	♦	♦	ess	101, 168, +++, +++
<i>Macquartia grisea</i> (Fallén, 1810)	33	950	♦	♦	e	+++
<i>Macquartia praefica</i> (Meigen, 1824)	69	1160	♦	♦	hom	+++
<i>Macquartia tenebricosa</i> (Meigen, 1824)	17, 33, 69, 84, 165, 223	890-1550	♦	♦	wcp	101, 116, 117, +++, +++
<i>Macquartia viridana</i> Robineau-Desvoidy, 1863	24, 28	1100-1200	♦	♦	ess	101, 116, 117, +++, +++
<i>Phytomyptera nigrina</i> (Meigen, 1824)	192	700-900	♦	♦	e	101
<i>Graphogaster brunneascens</i> Villeneuve, 1907	69	1160	♦	♦	wcp	+++
<i>Actia crassicornis</i> (Meigen, 1824)	42, 68, 71, 252	800-1300	♦	♦	ess	101, 116, 117, +++, +++
<i>Actia pilipennis</i> (Fallén, 1810)	246	1300	♦	♦	hoes	+++
<i>Peribaeta tibialis</i> (Robineau-Desvoidy, 1851)	33, 69	950-1160	♦	♦	spat	+++
<i>Ceranthis lichwardtiana</i> (Villeneuve, 1931)	7	1900	♦	♦	e	200
<i>Siphona cristata</i> (Fabricius, 1805)	210, 212	1000-1100	♦	♦	h	+++
<i>Siphona flavifrons</i> Staeger, 1849	27, 221	1270-1400	♦	♦	des, h*	101, 168, +++, +++
<i>Siphona geniculata</i> (De Geer, 1776)	192	700-900	♦	♦	hoes, h*	101, 184
<i>Aphria longirostris</i> (Meigen, 1824)	124	1700	♦	♦	wcp	+++
<i>Demoticus plebejus</i> (Fallén, 1810)	30	1700	♦	♦	wes	101, 168
<i>Bithia glirina</i> (Rondani, 1861)	27, 72, 130, 247	1300-1500	♦	♦	wes	+++
<i>Bithia modesta</i> (Meigen, 1824)	33, 69	950-1160	♦	♦	spat	+++
<i>Bithia spreia</i> (Meigen, 1824)	192	700-900	♦	♦	wes	101, 182

Table 3. Continued.

<i>Leskia aurea</i> (Fallén, 1820)	56, 232, 238	1000-1100	◆	hoes	+++
<i>Solieria fenestrata</i> (Meigen, 1824)	41	800-1000	●	wes	101, 116, 117
<i>Solieria pacifica</i> (Meigen, 1824)	192	700-900	●	e	101, 182
<i>Mimhoidea rufiventris</i> (Fallén, 1817)	28, 192,	700-1200	◆	tp	101, 182, +++
<i>Mimhoidea picta</i> (Zetterstedt, 1844)	221	900-1700	●	e, bm	101, 116
<i>Microphthalma europea</i> Egger, 1860	69	1160	◆	? on	+++
<i>Dexiosoma caninum</i> (Fabricius, 1781)	153	1217	●	des	101
<i>Trixia conspersa</i> (Harris, 1776)	28	1100-1200	●	wes	+++
<i>Billaea adelptha</i> (Loew, 1873)	41	800-1000	●	et	101, 116, 117
<i>Billaea fortis</i> (Rondani, 1862)	28	1100-1200	●	des	+++
<i>Billaea irrorata</i> (Meigen, 1826)	241	1100	◆	e	+++
<i>Billaea pectinata</i> (Meigen, 1826)	28, 33, 41, 173, 192	700-1200	●	mca	101, 116, 117, +++
<i>Billaea triangulifera</i> (Zetterstedt, 1844)	57, 61, 124, 132, 170, 243, 254	1100-1700	●	hoes	97, 101, +++
<i>Dimera carinifrons</i> (Fallén, 1817)	6, 7, 28, 30, 55, 72, 82, 85, 112, 159, 221, 224, 242	1000-1900	●	◆	101, 116, 117, 168, +++
<i>Dimera ferina</i> (Fallén, 1817)	26, 42, 54, 74, 80, 84, 85, 135, 161	870-1600	●	wes	101, 116, 117, +++
<i>Dimera grisescens</i> (Fallén, 1817)	221	800	●	esca, ? h	101, 116, 117, +++
<i>Estheria bohemani</i> (Rondani, 1862)	30, 188	1700-1800	●	e	+++
<i>Estheria cristata</i> (Meigen, 1826)	246	1300	●	e	+++
<i>Estheria petiolata</i> (Bonsdorff, 1866)	30, 41, 54, 97, 132, 240, 241, 252	700-1700	●	wces	101, 116, 117, +++
<i>Estheria picta</i> (Meigen, 1826)	42, 83, 135	800-1500	●	wcp	101
<i>Dexia rustica</i> (Fabricius, 1775)	9, 28, 50, 57, 145	600-1200	●	hoes	101, 116, 117, 168, 184, +++
<i>Prosenia siberita</i> (Fabricius, 1775)	6, 19, 30, 41, 225, 256	800-1830	●	hpta	101, 116, 117, +++
<i>Zenaria cinerea</i> Meigen, 1826	117, 131, 161, 180, 196	880-1400	●	wp	184, 101, +++
<i>Eriothrix apenninus</i> (Rondani, 1862)	100, 200	1930-2100	●	? wp	+++

Table 3. Continued.

<i>Eriothrix rufomaculatus</i> (De Geer, 1776)	10, 62, 10, 120, 124, 196, 256	800-2100	♦	♦	♦	tp	185, 101, +++, +++
<i>Ramonda spathulata</i> (Fallén, 1820)	246	1300	♦	♦	♦	tp	+++
<i>Periscepsia carbonaria</i> (Panzer, 1798)	162	1300	♦	♦	♦	ppt	+++
<i>Athrycia trepida</i> (Meigen, 1824)	28, 132	1100-1350	♦	♦	♦	tp	150, 101, +++, +++
<i>Voria ruralis</i> (Fallén, 1810)	57, 123, 236, 249	800-1500	♦	♦	♦	k	101, 116, 117, +++, +++
<i>Phylomyia volvulus</i> (Fabricius, 1794)	72	1350-1400	♦	♦	♦	hoes	+++
<i>Thelaira nigripes</i> (Fabricius, 1794)	28, 221	1100-1200	♦	♦	♦	tp	101, +++, +++
<i>Halidaya aurea</i> Egger, 1856	56	1000	♦	♦	♦	hoes	+++
<i>Stomina calliandra</i> (Rondani, 1862)	167, 221	900	♦	♦	♦	mea	101, +++, +++
<i>Stomina tachinoides</i> (Fallén, 1817)	70	1200	♦	♦	♦	wcp	+++
<i>Rhamphina pedemontana</i> (Meigen, 1824)	236, 251	1100-1200	♦	♦	♦	se, ? mm	+++
<i>Dufouria chahbeata</i> (Meigen, 1824)	221, 28	1100-1200	♦	♦	♦	dp	101, 168, +++, +++
<i>Dufouria nigrita</i> (Fallén, 1810)	28, 162	1100-1300	♦	♦	♦	wcp	+++
<i>Microsoma exiguum</i> (Meigen, 1824)	196	880	♦	♦	♦	dp	101, 185
<i>Eliozena helluo</i> (Fabricius, 1805)	33, 167	900-950	♦	♦	♦	tp	+++
<i>Eliozena pellucens</i> (Fallén, 1820)	31, 48,	680-920	♦	♦	♦	des	+++
<i>Chitomyza continua</i> (Panzer, 1798)	115, 235	910-1100	♦	♦	♦	tp	+++
<i>Ectophasia crassipennis</i> (Fabricius, 1794)	10, 32, 39, 54, 69, 89, 167, 194, 236, 242	750-1300	♦	♦	♦	tp	99, 101, +++, +++
<i>Ectophasia oblonga</i> (Robineau-Desvoidy, 1830)	32, 69, 210, 240	940-1160	♦	♦	♦	wp	+++
<i>Gymnosoma clavatum</i> (Rohdendorf, 1947)	20, 54, 119,	950-1400	♦	♦	♦	tp	+++
<i>Gymnosoma costatum</i> (Panzer, 1800)	254	850	♦	♦	♦	tp	101
<i>Gymnosoma dolycoridis</i> Dupuis, 1961	55, 79, 174, 239	720-1260	♦	♦	♦	ess	+++
<i>Gymnosoma inornatum</i> Zimin, 1966	80, 28	870-1200	♦	♦	♦	tp	97, 101, +++, +++
<i>Gymnosoma nitens</i> Meigen, 1824	28	1100-1200	♦	♦	♦	esca	+++
<i>Gymnosoma rotundatum</i> (Linnaeus, 1758)	43, 69, 74, 104, 115, 119, 120, 133, 146, 162, 171, 199, 221, 242, 254	850-1600	♦	♦	♦	tp	101, 116, 117, 168, 183, +++, +++
<i>Opesia cana</i> (Meigen, 1824)	35	1120	♦	♦	♦	ess	+++

Table 3. Continued.

<i>Elomya lateralis</i> (Meigen, 1824)	56, 234, 243 58, 131, 165, 172, 198, 232, 234, 238	1000-1200	◆	◆	tp	116, 117, 100, 101, +++
<i>Phasia (Phasia) obesa</i> (Fabricius, 1798)	850-1500	●	◆	◆	tp	+++
<i>Phasia (Phasia) subcoleoptera</i> (Linnaeus, 1767)	15, 34, 170	1200-1300	◆	◆	tp	+++
<i>Phasia (Hyalomyia) pusilla</i> Meigen, 1824	28	1100-1200	◆	◆	tp	+++
<i>Dionaea aurifrons</i> (Meigen, 1824)	27, 61, 105, 121, 172, 205, 236	850-1550	●	◆	tp	101, +++
<i>Leucostoma tetraptera</i> (Meigen, 1824)	144, 149	900-1000	◆	◆	wcp	+++
<i>Clairvillea biguttata</i> (Meigen, 1824)	20, 60, 146	950-1130	●	◆	dp	+++
<i>Labigaster forcipata</i> (Meigen, 1824)	243	1200	◆	◆	wes	+++
<i>Labigaster paniciceta</i> (Rondan, 1861)	129, 167, 235	900-1250	●	◆	e, cse	+++
<i>Cylindromyia (Plesiocypria) rubida</i> (Loew, 1854)	223	890-950	●	◆	om	168
<i>Cylindromyia (Cylindromyia) bicolor</i> (Olivier, 1812)	33, 115, 167, 172, 235	850-1100	●	◆	mca	+++
	10, 15, 21, 41, 82, 90, 92, 105, 120, 132, 152, 174, 206, 223, 232, 238, 246, 253			◆	hop	168, 101, 116, 117, +++
<i>Cylindromyia (Cylindromyia) brassicaria</i> (Fabricius, 1775)			●	◆		
<i>Cylindromyia (Cylindromyia) brevicornis</i> (Loew, 1844)	55, 146	900-1200	●	◆	des	+++
<i>Cylindromyia (Cylindromyia) pilipes</i> (Loew, 1844)	221, 239, 242 85, 121	1100-1200 750-1020	●	◆	wcp mas	168, 101, +++ 101, 150
<i>Cylindromyia (Dipuisia) crassa</i> (Loew, 1845)			●	◆		
<i>Cylindromyia (Calocyptra) intermedia</i> (Meigen, 1824)	41, 129, 251	780-1250	●	◆	h	101, 116, 117, +++
<i>Cylindromyia (Neocyphera) auriceps</i> (Meigen, 1838)	28	1100-1200	●	◆	tp	+++
<i>Cylindromyia (Neocyphera) interrupta</i> (Meigen, 1824)	243, 251	1120-1200	●	◆	h	+++
<i>Hemyda vitata</i> (Meigen, 1824)	235	1100	●	◆	hoes	+++
<i>Besseria dimidiata</i> (Zetterstedt, 1844)	193, 221	800-900	●	◆	e	101, 116, 117, 183
<i>Phania funesta</i> (Meigen, 1824)	222	840	●	◆	e	+++

Table 4. Zoogeographical characteristics of Diptera (Insecta) according to the vegetation belts of the Vitosha Mt.

Note. Species that have not exact localities (only Vitosha is given) are not included in the distribution according to the vegetation belts. They are presented only as a total number.

Areographical categories	Vitosha Mt.			Rila Mts.			Pirin Mts.		
	Meso- and mesoendophytic mixed forests - up to 1100-1400 m	Beech forests - from 1100-1840 m to 1400-2050 m	Coniferous forests - from 1400 m to 1700-2050 m	Subalpine vegetation - over 1700-2000 m	Total number, %	Total number, %	Total number, %	Total number, %	Total number, %
Species distributed in the Palaearctic and out of it	145 (20.5)	107 (18.1)	49 (18.8)	28 (19.6)	254 (20.0)	258 (25.7)	156 (21.0)		
NORTH TYPE	138 (19.5)	107 (18.1)	49 (18.8)	28 (19.6)	247 (19.4)	255 (25.4)	151 (20.3)		
Cosmopolitan	11 (1.5)	5 (0.8)	2 (0.8)	2 (1.3)	12 (0.9)	7 (0.7)	6 (0.8)		
Semicosmopolitan	3 (0.4)	1 (0.2)			3 (0.2)	3 (0.3)	3 (0.4)		
Holarctic-Paleotropical-Neotropical	1 (0.1)	1 (0.2)			3 (0.2)	3 (0.3)	1 (0.1)		
Holarctic-Paleotropical-Australian	1 (0.1)	1 (0.2)	1 (0.4)		1 (0.08)	5 (0.5)	3 (0.4)		
Holarctic-Paleotropical					1 (0.08)	2 (0.2)	1 (0.1)		
Holarctic-Neotropical-Australian	1 (0.1)	1 (0.2)			2 (0.1)				
Holarctic-Neotropical-Oriental	3 (0.4)	2 (0.3)			5 (0.4)	9 (0.9)	5 (0.7)		
Holarctic-Neotropical-Afrotropical	2 (0.3)				2 (0.1)	2 (0.2)	2 (0.3)		
Holarctic-Oriental-Australian	1 (0.1)				1 (0.08)	1 (0.1)			
Holarctic-Afrotropical-Australian	1 (0.1)				1 (0.08)	1 (0.1)			
Holarctic-Neotropical	5 (0.7)	3 (0.5)	2 (0.8)	3 (2.1)	6 (0.5)	4 (0.4)	3 (0.4)		
Holarctic-Afrotropical	2 (0.3)	1 (0.2)	1 (0.4)	1 (0.7)	2 (0.1)	3 (0.3)	1 (0.1)		
Holarctic-Oriental	13 (1.8)	9 ((1.5))	4 (1.5)	2 (1.3)	28 (2.2)	31 (3.1)	23 (3.1)		
Holarctic-Australian	2 (0.3)	1 (0.2)			4 (0.3)	5 (0.5)	2 (0.3)		
Palearctic-Paleotropical-Australian	4 (0.6)	2 (0.3)			4 (0.3)	3 (0.3)	4 (0.5)		
Palearctic-Afrotropical-Australian						1 (0.1)			
Palearctic-Oriental-Australian			1 (0.2)		3 (0.2)	2 (0.2)			
Palearctic-Paleotropical	2 (0.3)	2 (0.3)	1 (0.4)	1 (0.7)	3 (0.2)	6 (0.6)	4 (0.5)		
Palearctic-Afrotropical	2 (0.3)	2 (0.3)	1 (0.4)	1 (0.7)	2 (0.1)	2 (0.2)	3 (0.4)		
Palearctic-Oriental	12 (1.7)	9 ((1.5))	3 (1.2)	1 (0.7)	23 (1.8)	29 (2.9)	13 (1.7)		
Palearctic-Australian						1 (0.1)	1 (0.1)		
West Palaeartic-Oriental	2 (0.3)				3 (0.2)	10 (1.0)	2 (0.3)		
Disjunct Palaeartic-Oriental						1 (0.1)	1 (0.1)		
West Palaeartic-Afrotropical									
West Palaeartic-Neotropical	1 (0.1)	1 (0.2)		1 (0.7)	16 (11.2)	1 (0.08)	1 (0.1)		
Holarctic	69 (9.8)	65 (11.0)	33 (12.7)		137 (10.8)	124 (12.4)	72 (9.7)		

Table 4. Continued.

SOUTH TYPE	7 (1.0)	7 (0.6)	7 (0.6)	3 (0.3)	5 (0.7)
South Palaearctic-Paleotropical-Australian				1 (0.08)	1 (0.1)
South Palaearctic-Paleotropical	1 (0.1)			2 (0.1)	1 (0.1)
South Palaearctic-Afrotropical	2 (0.3)			1 (0.08)	1 (0.1)
South Palaearctic-Oriental	1 (0.1)			1 (0.08)	1 (0.1)
Paleotropical-Mediterranean				1 (0.08)	1 (0.1)
Afrotropical-Mediterranean	1 (0.1)			2 (0.1)	1 (0.1)
Oriental-Mediterranean	2 (0.3)			1 (0.08)	1 (0.1)
Species with Palaearctic distribution	562 (79.5)	485 (81.9)	211 (81.2)	115 (80.4)	1018 (80.0)
PALAEARCTIC TYPE	180 (25.5)	129 (21.8)	60 (23.1)	31 (21.7)	302 (23.7)
Holopalaearctic	14 (2.0)	11 (1.9)	6 (2.3)	4 (2.8)	18 (1.4)
Transpalaearctic	53 (7.5)	38 (6.4)	11 (4.2)	7 (4.9)	87 (6.8)
West and Central Palaearctic	17 (2.4)	12 (2.0)	7 (2.7)	2 (1.3)	30 (2.4)
West Palaearctic	27 (3.8)	9 ((1.5)	4 (1.5)	1 (0.7)	37 (2.9)
Disjunct Palaearctic	16 (2.3)	15 (2.5)	5 (1.9)	2 (1.3)	26 (2.0)
South Palaearctic	1 (0.1)	1 (0.2)			2 (0.1)
European-Anatolian-North African	2 (0.3)	1 (0.2)	2 (0.8)	2 (1.3)	5 (0.4)
European-North African	17 (2.4)	18 (3.0)	11 (4.2)	8 (5.6)	31 (2.4)
Euro-siberian-Anatolian-Central Asian		1 (0.2)	1 (0.4)	1 (0.4)	2 (0.1)
Euro-siberian-Central Asian	8 (1.1)	4 (0.7)	1 (0.4)		17 (1.3)
West Euro-siberian-Anatolian-Central Asian		1 (0.2)	1 (0.4)	1 (0.4)	1 (0.08)
West Euro-siberian-Central Asian	2 (0.3)	2 (0.3)	1 (0.4)	1 (0.7)	3 (0.2)
West Euro-siberian-West Central Asian	2 (0.3)				2 (0.1)
West Euro-siberian-Iran-Turanian	1 (0.1)	1 (0.2)	1 (0.4)		1 (0.08)
West Euro-siberian-Anatolian-Turanian	1 (0.1)				1 (0.08)
West Euro-siberian-Anatolian		2 (0.3)	2 (0.8)	1 (0.7)	2 (0.1)
West Euro-siberian-Turanian	1 (0.1)				1 (0.08)
European-Central Asian		1 (0.2)			1 (0.08)
East European-Central Asian					2 (0.2)
European-West Central Asian	4 (0.6)	8 (1.3)	5 (1.9)	3 (2.1)	14 (1.1)
European-Southwest Asian	4 (0.6)				1 (0.08)
European-Anatolian-Iran-Turanian	1 (0.1)				5 (0.4)
European-Iran-Turanian	1 (0.1)	1 (0.2)	1 (0.4)		8 (0.8)
European-Turanian	8 (1.1)	3 (0.5)	1 (0.4)		11 (0.9)
EURO-SEBRIAN TYPE	350 (49.5)	337 (56.9)	142 (57.3)	82 (57.3)	655 (51.5)
Holo-euro-siberian	35 (4.9)	36 (6.1)	18 (6.9)	5 (3.5)	69 (5.4)
West and Central Eurosiberian	16 (2.3)	17 (2.9)	8 (3.1)	3 (2.1)	28 (2.2)
West Euro-siberian	23 (3.2)	20 (3.4)	10 (3.8)	4 (2.8)	45 (3.5)
Disjunct Euro-siberian	40 (5.6)	38 (6.4)	20 (7.7)	7 (4.9)	62 (4.9)
European and South Siberian	8 (1.1)	6 (1.0)	1 (0.4)	2 (1.3)	10 (0.8)
					6 (0.6)
					11 (1.5)

Table 4. Continued.

European-Anatolian	6 (0.8)	6 (1.0)	2 (0.8)	14 (1.1)	10 (1.0)	4 (0.5)
European	187 (264)	185 (312)	78 (300)	57 (399)	355 (279)	183 (182)
Central and East European					2 (0.2)	141 (19.0)
Central and South European-Anatolian	4 (0.6)			5 (0.4)	5 (0.5)	3 (0.4)
Central and Southeast European-Anatolian				1 (0.08)	2 (0.2)	
Central and Southeast European-Lebanonian					1 (0.1)	
Central (and Middle) and South European	20 (2.8)	15 (2.5)	2 (0.8)	41 (3.2)	25 (2.5)	18 (2.4)
Central and Southeast European	11 (1.6)	10 (1.7)	3 (1.2)	21 (1.6)	10 (1.0)	6 (0.8)
East European		4 (0.7)		4 (0.3)		
MEDITERRANEAN TYPE	29 (4.1)	11 (1.8)	6 (2.3)	2 (1.3)	46 (3.6)	45 (4.5)
Mediterranean and South Siberian	1 (0.1)			1 (0.08)	3 (0.3)	1 (0.1)
Mediterranean and Southwest Siberian	1 (0.1)			1 (0.08)	1 (0.1)	1 (0.1)
Mediterranean-Central Asian	3 (0.4)	1 (0.2)		3 (0.2)	6 (0.6)	6 (0.8)
North Mediterranean-Central Asian					1 (0.1)	
Mediterranean-West Central Asian	2 (0.3)	1 (0.2)		3 (0.2)	2 (0.2)	2 (0.3)
Mediterranean-Iran-Turanian	1 (0.1)			2 (0.1)		
Northeast Mediterranean-Iran-Turanian						1 (0.1)
Mediterranean-Turanian	1 (0.1)			1 (0.08)	1 (0.1)	2 (0.3)
North Mediterranean-Turanian	2 (0.3)	1 (0.2)		2 (0.1)	1 (0.1)	3 (0.4)
South European and South Siberian					1 (0.1)	2 (0.3)
Central and South European-Iran-Turanian	1 (0.1)	1 (0.2)		2 (0.1)	2 (0.2)	1 (0.1)
Central and Southeast European-Iran-Turanian						1 (0.1)
Central and South European-North African	1 (0.1)	2 (0.3)	1 (0.4)	4 (0.3)	1 (0.1)	1 (0.1)
South European-North African	1 (0.1)		1 (0.4)	1 (0.08)	1 (0.1)	
Southeast European-North African			1 (0.4)	1 (0.08)		
Holomediterranean	7 (1.0)	2 (0.3)	1 (0.4)	9 (0.7)	8 (0.8)	10 (1.3)
North Mediterranean	2 (0.3)			3 (0.2)	6 (0.6)	4 (0.5)
South European	4 (0.6)	1 (0.2)	1 (0.4)	7 (0.5)	7 (0.7)	3 (0.4)
Southeast European-Anatolian				1 (0.08)		
Southeast European		2 (0.3)	2 (0.8)	1 (0.7)	3 (0.2)	1 (0.1)
East Mediterranean	1 (0.1)				1 (0.08)	1 (0.1)
Balkan-Anatolian	1 (0.1)				3 (0.3)	2 (0.3)
ENDEMICS	3 (0.4)	8 (1.3)	3 (1.2)	15 (1.2)	12 (1.2)	13 (1.7)
Balkan subendemic					1 (0.08)	2 (0.2)
Balkan endemic	1 (0.1)	2 (0.3)		3 (0.2)	1 (0.1)	4 (0.5)
Bulgarian endemic	2 (0.3)	6 (1.0)	3 (1.2)	11 (0.8)	7 (0.7)	6 (0.8)
Regional endemic					2 (0.2)	2 (0.3)
Total	707 (55.6)	592 (46.5)	260 (20.4)	143 (11.2)	1272	1003
						759

faunistic elements that could be considered separately from the Mediterranean ones as well (Gruev & Kusmanov 1994, 1999; Gruev 1995, Gruev & Bechev, 2000).

The **Eurosiberian species** include 14 areographical categories, of which the European (355 species or 27.9%), Holoeuro-siberian (69 species or 5.4%), Disjunct Eurosiberian (62 species or 4.9%) and West Eurosiberian (45 species or 3.5%) taxa are best represented. The ratio of these categories is different for the separate families (the Holoeuro-siberian, Disjunct Eurosiberian and European species of the family Tachinidae are almost equal in number as the Eurosiberian forms are 50% in total, while in other families the Central and South European species are better represented). The number of taxa of these categories found in the separate vegetation belts varies from 2.8% to 39.9% (4-187 species) and increases (as a percentage) with height up to 2050 m a.s.l. Most Eurosiberian species (as a percentage) are found in the coniferous and subalpine belts. In the beech, coniferous and subalpine belts the Eurosiberian species predominate over the other zoogeographical categories (56.9-57.3%). A number of disjunctive areas are presented – a longitudinal disjunction for parts of Siberia and Central Asia (Tables 3 and 4) and latitudinal disjunction with typical for the Eurosiberian complex boreomontane, boreoalpine and arctic-alpine distribution (Gorodkov 1984, Josifov 1988, Hubenov 2015a). Of interest is the significant presence of Eurosiberian species in the first vegetation belt of the Vitosha Mt., which could be explained in two ways: 1) It is possible a part of these species to have unclear Palaearctic distribution; 2) It is supposed that the humid mountain valleys characterised with cooler climate, have facilitated the migration of the above-mentioned forms to the lowlands. Finding of Eurosiberian boreomontane forms at low altitudes has also been reported for other insect groups as Heteroptera, Cerambycidae (Coleoptera) and Tachinidae (Diptera) by Josifov (1963, 1976), Georgiev & Hubenov (2006) and Hubenov (1992, 2008b). For Cerambycidae this fact is due to the large afforestations of conifers in the first two vegetation belts. Probably because of this reason, many boreomontane and montane species that feed on conifers, go down below 1000 m a.s.l. There is a difference with the Rila and Pirin Mountains with respect to the Eurosiberian species where they are less than in the Vitosha Mt. This group includes 42.8 and 44.2% of the spe-

cies composition of the Rila and Pirin Mountains, respectively.

The Mediterranean species, combined into 22 zoogeographical categories, are presented mainly in the first two vegetation belts and their number rapidly decreases with altitude. Because of the big variety of these areas, the group is divided into many subgroups with different origin, distribution and ecological peculiarities of the taxa. This complexity contributes to establishing of various zoogeographical classifications for Bulgaria (Josifov 1981, 1986, 1988, 1999; Gruev 1988, 1995, 2000a, 2000b, 2000c, 2002; Heiss & Josifov 1990; Gruev & Kusmanov 1994; Hubenov 1996, 2008a; Gruev & Bechev 2000; Popov 2002). The Mediterranean species, established in one or two vegetation belts, prevail (Table 3). A significant percentage of these species and their relatively scarce populations are due to the lower ecological flexibility of the Mediterranean forms in comparison with the previous ones. The Mediterranean species include from 1.3 to 4.1% (2 to 29 species) of Diptera of the separate vegetation belts in the Vitosha Mt. (Table 4). The Holomediterranean (9 species or 0.7%) and South European (7 species or 0.5%) species are the most numerous. In the subalpine belt two Mediterranean species are established (*Prosimulium petrosum* Rubtsov – South-East European species of the family Simuliidae and *Megaselia oxybelorum* Schmitz – Holomediterranean species of the family Phoridae). This could be Montane Mediterranean forms or species with unclear distribution. When comparing with the Rila and Pirin Mountains, there is a higher percentage (3.6-4.5-5.5%) of the Mediterranean taxa southwards which is related to the specific natural conditions and geographical location of these mountains. There are no significant differences in the distribution of the separate areographical categories in the Mediterranean species of the mountains: the Mediterranean-Central Asian, Holomediterranean, North Mediterranean and South European species prevail (Table 4).

Endemics. This category includes taxa, which are not distributed outside the Balkan Peninsula. The percentage of endemism is low in Diptera (15 species or 1.2%). The Bulgarian endemic forms prevail (10 species or 0.8%). Endemic forms have not been established in the subalpine belt, in contrast to the Rila and Pirin Mountains. The main part of endemic species of

the Vitosha Mt. is related to the beech and coniferous forest belts (3-8 species or 1.2-1.3%), above 1300-1500 m a.s.l. This suggests that these endemic species are postglacial neoendemics which are to be connected with the Eurosiberian forms. Regional endemics have not been established among Diptera of the Vitosha Mt., in contrast to the Rila and Pirin Mountains. The endemic dipterans are rare and are mostly newly described taxa (five species from 1916 to 1940 and all the others after 1964).

Conclusion

A total of 1272 two-winged species (31.8% of the species found in Bulgaria) that belong to 58 families have been reported from the Vitosha Mt. The dipterous fauna can be divided into two main groups: 1) species with Mediterranean type of distribution (53 species or 4.2%) – more thermophilic and distributed mainly in the southern parts of the Palaearctic; seven species of southern type, distributed in the Palaearctic and beyond it, can be formally related to this group as well; 2) species with Palaearctic and Eurosiberian type of distribution (1219 species or 95.8%) – more cold-resistant and widely distributed in the Palaearctic; 247 species of northern type, distributed in the Palaearctic and beyond it, can be formally related to this group as well. The zoogeographical character of the Tachinidae fauna is determined by the second group. The share of the two groups is different in the separate vegetation belts (Table 4). The percentage of the typical Mediterranean species of the Vitosha, Rila and Pirin Mountains is close and increases from north to south (3.6-4.5-5.5%, respectively). The variety of areographical categories decreases with altitude.

Mesophylllic and xeromesophylllic mixed forests – 707 species (55.6%) of 71 areographical categories. From the species with Mediterranean type of distribution (36 species or 5.1%) the Holomediterranean and South European species prevail, and from the species with Palaearctic and Eurosiberian type of distribution (671 species or 94.9%) the Holarctic, Transpalaearctic and European species are best represented. The number of the West Palaearctic, Holoeurosiberian, West Eurosiberian and Disjunct Eurosiberian species is increased. Species of southern type, distributed in the Palaearctic and beyond it, are presented. Two Bulgarian and one Balkan en-

demic forms have been established.

Beech forests – 592 species (46.5%) of 55 areographical categories. From the species with Mediterranean type of distribution (11 species or 1.8%) the Central and South European-North African, Holomediterranean and South European species are most numerous, and from the species with Palaearctic and Eurosiberian type of distribution (581 species or 98.2%) the Holarctic, Transpalaearctic, Holoeurosiberian, Disjunct Eurosiberian and European species are best represented. The species of southern type distributed in the Palaearctic and beyond it are not presented. The number of the European-North African, West and Central Eurosiberian and West Eurosiberian species is increased. Two Balkan and six Bulgarian endemics have been found. The percentage of the Mediterranean forms decreases.

Coniferous forests – 260 species (20.4%) of 41 areographical categories. From the species with Mediterranean type of distribution (6 species or 2.3%) the Southeast European species are most numerous, and from the species with Palaearctic and Eurosiberian type of distribution (254 species or 97.7%) the Holarctic, Disjunct Eurosiberian and European species prevail. The Transpalaearctic, European-North African and Holoeurosiberian species are better represented. The number of the endemics and Mediterranean forms decreases. In comparison with the Rila (27.6%) and Pirin (35.7%) Mountains, the dipterous fauna of the Vitosha Mt. is poorly presented in the coniferous forests. This is connected with the poor floristic composition, limited area and fragmentation of the coniferous belt of the Vitosha Mt..

Subalpine vegetation – 143 species (11.2%) of 29 areographical categories. Two species with Mediterranean type of distribution (Holomediterranean and South European species) have been established. From the species with Palaearctic and Eurosiberian type of distribution (141 species) the Holarctic and European species are most numerous. The Transpalaearctic, European-North African and Disjunct Eurosiberian taxa are well presented. Endemic forms have not been established. When comparing with the Rila (99 species) and Pirin (79 species) Mountains, the species composition of the Vitosha Mt. in the subalpine zone is richer. This is connected with the lower height of the Vitosha Mt. and the lack of a pronounced coniferous belt in the southern parts of the mountain.

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(Footnotes)

¹ Of the species composition of Phoridae (Table 3) are excluded 165 species, represented only in the Ph.D. thesis of M. Langurov (Langurov 2001a). They are presented as numbers in the tables.

² Of the species composition of Phoridae are excluded 165 species, represented only in the Ph.D. thesis of M. Langurov (Langurov 2001a). They are presented as numbers in Tables 2 and 4.

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