

# Bulgarian *Pezizales* : diversity, distribution and ecology

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**Abstract.** The checklist of Bulgarian *Pezizales* is presented which includes 191 infrageneric taxa belonging to 53 genera. The species names published so far in relevant literature are also given. Data about the distribution across the country, literature sources, and trophic affiliation are given for each recorded taxon. Thirty-two species are included in the *Red List of fungi in Bulgaria*.

**Key words:** Bulgaria, checklist, distribution, fungal diversity, *Pezizales*

## Introduction

The paper presents generalized information about the Discomycetes fungi belonging to the order *Pezizales* (*Pezizomycetes*, *Ascomycota*) already reported for Bulgaria. The checklist of fungi contains the species (introduced by their correct names), their earlier names under which they have been published in Bulgaria, the literature sources, data about their distribution by floristic regions, the substrata, and trophic affiliation. Thirty-two *Pezizales* species have conservation value included in the *Red List of fungi in Bulgaria* (Gyosheva & al. 2006).

The first species of *Pezizales* (cup fungi) reported from Bulgaria was *Choiromyces meandriformis* (Georgiev 1906). Subsequently, Ivanov & Dimitrov (1922, 1923) published data on the species *Rhizina undulata*. In several publications Barzakov (1926, 1928, 1929, 1931, 1932, 1933, 1939) reported some 20 species belonging to the pezizoid genera *Aleuria*, *Gyromitra*, *Helvella*, *Morchella*, *Otidea*, *Peziza*, *Pseudoplectania*, *Sarcoscypha*, *Sarcosphaera*, *Scutellinia*, and *Choiromyces meandriformis*.

In the 1950s and 1970s, Hinkova carried out intensive researches into the species composition of macrofungi from Mt Vitoshka (Hinkova 1954, 1955a) and

Eastern Rila Mts (Hinkova 1958a, b). Aleksandrov (1968, 1969, 1970, 1971) reported a great number of new Discomycetes species for the country, including many *Pezizales*. Joint researches on the macrofungi (including cup fungi) in Mt Lozenska were made by Hinkova & Fakirova (1970) and Hinkova & Aleksandrov (1971). Data on the pezizas from the Ludogorie (Northeast Bulgaria) have been published by Hinkova (1962); from the Balkan Range by Hinkova (1965), Hinkova & Drumeva (1978), Fakirova & Dimitrova (1999), and Dimitrova (2002); from the Znepole region by Gyosheva-Bogoeva (1984), Gyosheva (1991), Gyosheva & Vassilev (1994), Gyosheva & Gusev (1998); from the Pirin Mts by Dimcheva & Stoichev (1987), Stoichev & Dimcheva (1988), Dimitrova & Assyov (2004), and Denchev & al. (2007); from the Rila Mts by Hinkova (1965), Gyosheva & Denchev (2000), Dimitrova (2002), Gyosheva (2003); from the Rhodopi Mts by Hinkova (1953, 1961), Hinkova & al. (1979), Stoichev (1981), Vanev & Reid (1986), Gyosheva & Zaimova (1996), Gyosheva (1998), Gyosheva & Andreeva (2000), and Dimitrova & Assyov (2004); from the Thracian Lowland by Stoichev & Dimcheva (1982), Hinkova & Stoichev (1983), etc. Single *Pezizales* species from Bulgaria have been reported by some foreign authors: Klika (1926) from the Rila Mts,

Dörfelt & Müsch (1987) from the Pirin Mts, Kuthan & Kotlaba (1981, 1989) mainly from the Bulgarian Black Sea Coast.

Comparatively well known in Bulgaria are the coprotroph ascomycetes, which include a great number of *Pezizales*: Hinkova (1955a), Hinkova & Ivanova (1965), Fakirova (1967, 1968, 1969, 1970, 1972, 1974, 1991), etc. The species composition and distribution of fungi from the genus *Peziza* in Bulgaria is studied by Dankova (2006) and Dimitrova & Dankova (in press).

## Material & methods

Families, genera and species of the Bulgarian *Pezizales* are given on Table 1 in alphabetic order. The author's names of the taxa are abbreviated according to Kirk & Ansell (2004). Nomenclature of *Pezizales* follows Kirk et al. (2001). The taxonomic and nomenclature decisions in the article have been made in conformity with the researches of Eckblad (1968), Dennis (1978), and

Dissing (2000). The fungal specimens from the Mycological Collection of the Institute of Botany (SOMF) and from the Mycological Collection of the Agricultural University, Plovdiv (SOA) have been studied. Distribution of the taxa is given according to the floristic regions adopted in the *Flora of the PR Bulgaria* (Jordanov 1966).

- |                            |                           |
|----------------------------|---------------------------|
| 1. Black Sea Coast         | 11. Mt Belasitsa          |
| 2. Northeast Bulgaria      | 12. Mt Slavyanka          |
| 3. Danubian Plain          | 13. Valley of Mesta River |
| 4. Forebalkan              | 14. Pirin Mts             |
| 5. Balkan Range            | 15. Rila Mts              |
| 6. Sofia region            | 16. Mt Sredna Gora        |
| 7. Znepole region          | 17. Rhodopi Mts           |
| 8. Vitosha region          | 18. Thracian Lowland      |
| 9. West Frontier Mts       | 19. Tundzha Hilly Country |
| 10. Valley of Struma River | 20. Mt Strandzha          |

The ecological-trophic groups are given after Arnolds (1981) and Gyosheva & Denchev (2000). The conservation status is indicated according to the *Red List of fungi in Bulgaria* (Gyosheva & al. 2006).

Table 1. Checklist of Bulgarian *Pezizales*.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
<b>Ascobolaceae</b>						
1	<i>Ascobolus albidus</i> P. Crouan & H. Crouan	Fakirova 1967 Fakirova 1970	8 2, 4, 15, 16	dung dung	C	
2.	<i>Ascobolus carbonarius</i> P. Karst. Syn. <i>Ascobolus atrofuscus</i> W. Phillips & Plowr.	Aleksandrov 1968; Fakirova 1970	8	dung, fireplace	C, Carb	
3.	<i>Ascobolus candidus</i> J. Schröt.	Hinkova & Fakirova 1970; Fakirova 1970 Fakirova 1968, 1969	16 8	dung dung	C	
4.	<i>Ascobolus crenulatus</i> P. Karst.	Fakirova 1968	14	dung	C	
5.	<i>Ascobolus equinus</i> (O.F. Müll.) P. Karst. Syn. <i>Lasiobolus equinus</i> Sacc. Syn. <i>Lasiobolus equinus</i> (O.F. Müll.) P. Karst.	Hinkova & Ivanova 1965 Fakirova 1967 Fakirova 1974	no data 8 1-20	dung dung dung	C	
6.	<i>Ascobolus fimiputris</i> (Quél.) Quél.	Fakirova 1970	1	dung	C	
7.	<i>Ascobolus immersus</i> Pers. Syn. <i>Dasyobolus immersus</i> (Pers.) Sacc.	Hinkova & Ivanova 1965 Fakirova 1967 Fakirova 1969	no data 8 14, 16, 20	dung dung dung	C	
8.	<i>Ascobolus michaudii</i> Boud.	Dimitrova 1994a Dimitrova 2002	8 20	dung dung	C	
9.	<i>Ascobolus porphyrosporus</i> (Hedw.) Fr.	Hinkova 1955a; Hinkova & Ivanova 1965	8	dung	C	
10.	<i>Ascobolus roseopurpurascens</i> Rehm	Hinkova & Ivanova 1965	no data	dung	C	
11.	<i>Ascobolus sacchariferus</i> Brumm.	Fakirova 1969, 1991	8	dung	C	
12.	<i>Ascobolus stercorarius</i> (Bull.) J. Schröt.	Fakirova 1969 Fakirova 1968	2 6	dung dung	C	

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
		Hinkova 1955a	8	dung		
	Syn. <i>Ascobolus furfuraceus</i> Pers.	Fakirova 1968	6	dung		
		Hinkova 1954, 1955a	8	dung		
	Syn. <i>Ascobolus aerugineus</i> Fr.	Hinkova & Ivanova 1965	no data	dung		
13.	<i>Ascophanus holmskjoldii</i> E.C. Hansen	Hinkova & Ivanova 1965	no data	dung	C	
		Fakirova 1967, 1968	8	dung		
		Fakirova 1970	8, 15, 20	dung		
14.	<i>Ascophanus pyronemoides</i> Rehm	Hinkova & Ivanova 1965	no data	dung	C	
15.	* <i>Saccobolus beckii</i> Heimerl	Fakirova 1970	5, 17	dung	C	EN
16.	<i>Saccobolus caesariatus</i> Renny	Fakirova 1991	20	dung	C	
17.	<i>Saccobolus citrinus</i> Boud. & Torrend	Fakirova 1972	8	dung	C	
18.	<i>Saccobolus depauperatus</i> (Berk. & Broome) Rehm	Fakirova 1969	1, 10, 14	dung	C	
		Fakirova 1970	1, 2, 5, 15, 16	dung		
	Syn. <i>Saccobolus kervernii</i> H. Crouan & P. Crouan	Hinkova & Ivanova 1965	no data	dung		
		Fakirova 1967	8	dung		
19.	<i>Saccobolus truncatus</i> Velen.	Fakirova 1967	1	dung	C	
20.	<i>Saccobolus versicolor</i> (P. Karst.) P. Karst.	Dimitrova 2002	14	dung	C	
	Syn. <i>Saccobolus violascens</i> Boud.	Fakirova 1970	2, 5, 11, 19, 20	dung		
21.	<i>Thecotheus pelletieri</i> (H. Crouan & P. Crouan) Boud.				C	
	Syn. <i>Ryparobius pelletieri</i> (H. Crouan & P. Crouan) Sacc.	Hinkova & Ivanova 1965	no data	dung		
<b>Ascodesmidaceae</b>						
22.	<i>Ascodesmis nigricans</i> Tiegh.	Fakirova 1972	4	dung	C	
<b>Caloscyphaceae</b>						
23.	<i>Caloscypha fulgens</i> (Pers.) Boud.	SOMF (unpubl.)	14	soil	Hu	
	Syn. <i>Plicariella fulgens</i> (Sowerby) Lindau	Hinkova 1958a, b	15	soil		
<b>Discinaceae</b>						
24.	* <i>Discina ancilis</i> (Pers.) Sacc.	Gyosheva & al. 2006	14	soil	Hu	VU
	Syn. <i>Discina perlata</i> (Fr.) Fr.	Hinkova & Drumeva 1978; Dimcheva 1983	5	soil		
		Aleksandrov 1968	8	soil		
		Dimcheva & Stoichev 1987	14	soil		
		Dimcheva 1983	17	soil		
25.	<i>Gyromitra esculenta</i> (Pers.) Fr.	Barzakov 1933; Hinkova 1954	8	soil	Hu	
		Hinkova 1961	10	soil		
		Denchev & al. 2007	14	soil		
		Hinkova 1958, 1961	15	soil		
		Hinkova 1961; Hinkova & al. 1983	17	soil		
26.	* <i>Gyromitra gigas</i> (Krombh.) Cooke	Hinkova 1954, 1955a	8	soil	Hu	EN
		Hinkova 1958a	15	soil		
	Syn. <i>Neogyromitra gigas</i> (Krombh.) S. Imai	Aleksandrov 1970	8	soil		
		Hinkova & Aleksandrov 1971	16	soil		
27.	<i>Gyromitra infula</i> (Schaeff.) Quél.	Hinkova 1954, 1955a; Aleksandrov 1970	8	soil	LeS	
		Hinkova 1965; Denchev & al. 2007	14	soil		
		Hinkova 1958a	15	soil		
		Hinkova & al. 1979; Gyosheva 1998	17	soil, wood		
28.	* <i>Gyromitra leucoxantha</i> (Bres.) Harmaja				Hu	EN
	Syn. <i>Discina leucoxantha</i> Bres.	Aleksandrov 1970, 1971	8	soil		
29.	* <i>Hydnotrya tulasnei</i> (Ber.) Ber. & Broome	Stoichev 1981; Dimitrova & Gyosheva 2008	17	soil	Hu	CR
30.	<i>Hydnotrya cerebriformis</i> (Tul. & C. Tul.) Harkn.	Stoichev & Gyosheva 2005	17	soil	Hu	

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
<b>Helvellaceae</b>						
31.	<i>Helvella acetabulum</i> (L.) Quél.	Dimitrova & Assyov 2004	14	soil	Hu	
		SOMF (unpubl.)	6, 17	soil		
	Syn. <i>Acetabula sulcata</i> Pers.	Hinkova 1961	1	soil		
		Hinkova 1962	2	soil		
		Hinkova 1955b	6	soil		
		Hinkova 1958a, b	15	soil		
	Syn. <i>Acetabula vulgaris</i> Fuckel	Hinkova 1955b	6	soil		
		Hinkova 1958a, b	15	soil		
	Syn. <i>Peziza acetabulum</i> L.	Barzakov 1939	6	soil		
	Syn. <i>Paxina acetabulum</i> (L.) Kuntze	Gyosheva 2003	15	soil		
32.	<i>Helvella albella</i> Quél.	Dimitrova 2006	10	soil	Hu	
33.	<i>Helvella albipes</i> Fuckel	Hinkova 1954, 1955a; Aleksandrov 1970	8	soil	Hu	
34.	* <i>Helvella atra</i> J. Koenig	Kuthan & Kotlaba 1989	1	soil	Hu	VU
		Hinkova 1962	2	soil		
		Dimitrova & Assyov 2004	14	soil		
		Hinkova & al. 1979	17	soil		
35.	<i>Helvella costifera</i> Nannf.	Dimitrova 2006	5	soil	Hu	
36.	<i>Helvella crispa</i> (Scop.) Fr.	Kuthan & Kotlaba 1981	1	soil	Hu	
		Fakirova & Dimitrova 1999; Dimitrova 2006	5	soil		
		Dimitrova 2002	7	soil		
		Dimitrova 2006	8	soil		
		Sechanov 1946	14	soil		
		Hinkova 1958a, b; Gyosheva 2003	15	soil		
		Hinkova & Fakirova 1970	16	soil		
37.	<i>Helvella dissingii</i> Korf				Hu	
	Syn. <i>Cyathipodia villosa</i> (Hedw.) Boud.	Hinkova & Drumeva 1978	5	soil		
38.	<i>Helvella elastica</i> Bull.	Fakirova & Dimitrova 1999	5	soil	Hu	
		Barzakov 1933; SOMF (unpubl.)	6	soil		
		SOMF (unpubl.)	8	soil		
		Dimitrova & Assyov 2004	10, 14	soil		
		Hinkova 1958a, b; SOMF (unpubl.)	15	soil		
		Gyosheva & Andreeva 2000	17	soil		
		Hinkova 1961	18	soil		
	Syn. <i>Leptopodia elastica</i> (Bull.) Boud.	Kuthan & Kotlaba 1981	1	soil		
		Hinkova 1962	2	soil		
39.	* <i>Helvella ephippium</i> Lév.	Dimitrova & Assyov 2004	6	soil	Hu	EN
		SOMF (unpubl.)	15	soil		
		Hinkova & Fakirova 1970	16	soil		
40.	<i>Helvella inflata</i> Cumino	Barzakov 1933	8	soil	Hu	
	Syn. <i>Gyromitra inflata</i> (Cumino) Cooke	Hinkova 1962	2	soil		
		Hinkova 1954; Aleksandrov 1970	8	soil		
41.	* <i>Helvella lactea</i> Boud.	Aleksandrov 1970, 1971	8	soil	Hu	CR
42.	<i>Helvella lacunosa</i> Afzel.	Barzakov 1926; Hinkova & Drumeva 1978	5	soil	Hu, LeS	
		Barzakov 1929	6	soil		
		Gyosheva 1998	7	soil		
		Hinkova 1955a; Aleksandrov 1969	8	soil, wood		
		Dimitrova & Assyov 2004	9, 14	soil		
		Hinkova 1958a	15	soil		
		Hinkova & Fakirova 1970; Hinkova & Drumeva 1978	16	soil		

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
	Syn. <i>Helvella sulcata</i> Afzel.	Hinkova & al. 1979	17	soil		
43.	* <i>Helvella leucomelaena</i> (Pers.) Nannf.	Dimitrova & Assyov 2004	17	soil	Hu	EN
	Syn. <i>Paxina leucomelaena</i> (Pers.) Kuntze	Hinkova & Drumeva 1978	5	soil		
		Aleksandrov 1969	8	soil		
		Hinkova & Aleksandrov 1971	16	soil		
44.	* <i>Helvella pezizoides</i> Afzel.	Hinkova & Aleksandrov 1971	16	soil	Hu	EN
45.	* <i>Helvella phlebophora</i> Pat. & Doass.	Kuthan & Kotlaba 1989	1	soil	Hu	EN
46.	<i>Helvella pulla</i> Holmsk.	Hinkova 1958a, b	15	soil	Hu	
47.	<i>Helvella queletii</i> Bres.	Kuthan & Kotlaba 1981	1	soil	Hu	
		Hinkova 1954; Aleksandrov 1971	8	soil		
		Hinkova & Aleksandrov 1971	16	soil		
48.	<i>Helvella rhodopoda</i> Krombh.	Barzakov 1928	15	soil	Hu	
<b>Morchellaceae</b>						
49.	* <i>Disciotis venosa</i> (Pers.: Fr.) Boud.				Hu, St	VU
	Syn. <i>Peziza venosa</i> Pers.	Barzakov 1929	5	herb. stem		
		Hinkova 1954, 1955a	8	soil		
	Syn. <i>Discina venosa</i> Pers.: Fr.	Hinkova 1962	2	soil		
		Aleksandrov 1970	8	soil		
		Hinkova 1958a, b	15	soil		
50.	<i>Mitrophora semilibera</i> (DC.) Lév.	Hinkova 1961	6	soil	Hu, St	
		Aleksandrov 1970	8	soil		
		Hinkova & Aleksandrov 1971	16	soil		
	Syn. <i>Mitrophora rimosipes</i> DC.	Stoichev & Dimcheva 1982	18	leaves		
	Syn. <i>Morchella rimosipes</i> DC.	Hinkova 1955a	8	soil		
51.	<i>Morchella crassipes</i> (Vent.) Pers.	Hinkova & Aleksandrov 1971	16	soil	Hu	
52.	* <i>Morchella elata</i> Fr.: Fr.	Hinkova 1955a; Aleksandrov 1970	8	soil	Hu	NT
		Dimcheva & Stoichev 1987	14	soil		
		Hinkova 1958a, b	15	soil		
		Hinkova 1961; Gyosheva 1998	17	soil		
53.	<i>Morchella esculenta</i> (L.) Pers.	Hinkova 1961, 1962	2	soil	Hu	
		Barzakov 1926, Aleksandrov 1970	8	soil		
		Dimitrova 2006	10	soil		
		Dörfelt & Müsch 1987; Kuthan & Kotlaba 1989	14	soil		
		Hinkova 1958a, b	15	soil		
		Hinkova 1961	16, 17, 18	soil		
54.	<i>Morchella vulgaris</i> (Pers.) Boud.	SOMF (unpubl.)	9	soil	Hu	
	Syn. <i>Morchella conica</i> Pers.	Hinkova 1961	1	soil		
		Barzakov 1933; Hinkova 1954; Aleksandrov 1971	8	soil		
		Dimcheva & Stoichev 1987	14	soil		
		Hinkova 1958a, b	15	soil		
		Hinkova & al. 1983; Gyosheva & Zaimova 1996; Gyosheva 1998	17	soil		
55.	* <i>Ptychoverpa bohemica</i> (Krombh.) Boud.	Hinkova 1954, 1955a; 1965; Aleksandrov 1970	8	soil	Hu	NT
		Hinkova 1958a, b	15	soil		
		Hinkova & Aleksandrov 1971	16	soil		
56.	* <i>Verpa conica</i> (O.F. Müll.) Sw.	Dimitrova 2002	5	soil	Hu	EN
		Hinkova 1961; SOMF (unpubl.)	6	soil		
		Hinkova 1955a	8	soil		

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
57.	<i>Verpa digitaliformis</i> Pers.	Hinkova & Drumeva 1978 Aleksandrov 1970	5 8	soil soil	Hu	
<b><i>Pezizaceae</i></b>						
58.	<i>Jodophanus carneus</i> (Pers.) Korf Syn. <i>Ascophanus carneus</i> (Pers.) Boud.	Hinkova 1962 Fakirova 1967 Fakirova 1969 Hinkova & Ivanova 1965	2 8 4, 7, 16 no data	dung dung dung dung	C	
59.	* <i>Pachyella babingtonii</i> (Berk.) Boud.	Dimitrova 1994b	9	cone	S	EN
60.	<i>Peziza abietina</i> Pers.	Hinkova 1954, 1955a	8	soil	Hu	
61.	<i>Peziza aeruginosa</i> Fr.	Barzakov 1928	15	wood	LeS	
62.	<i>Peziza ammophila</i> Durieu & Mont.	Dimitrova & Dankova 2009	1	soil	Hu	
63.	<i>Peziza ampliata</i> Pers.	Dimitrova 1997	8	soil	Hu	
64.	<i>Peziza amplissima</i> (Boud.) Sacc.	Aleksandrov 1970, 1971	8	soil	Hu	
65.	<i>Peziza arvernensis</i> Boud.  Syn. <i>Peziza sylvestris</i> (Boud.) Sacc. & Trotter	SOMF (unpubl.) Dankova 2006 Aleksandrov 1968, 1969; SOMF (unpubl.)	5 17 8	soil soil soil	Hu	
66.	<i>Peziza badia</i> Pers.  Syn. <i>Plicaria badia</i> (Pers.) Fuckel	Hinkova & Aleksandrov 1971 Gyosheva & Vassilev 1994 Hinkova 1954, 1955a; Aleksandrov 1968 Gyosheva 2003 Hinkova & al. 1979; Gyosheva & Andreeva 2000 Hinkova 1962 Hinkova 1958a, b	16 7 8 15 17 2 15	soil soil soil soil soil soil	Hu	
67.	<i>Peziza badiocnufa</i> Korf	Kuthan & Kotlaba 1981, 1989 Dankova 2006	1 15	soil soil	Hu	
68.	<i>Peziza badiofusca</i> (Boud.) Dennis Syn. <i>Otidea pleurota</i> (W. Phillips) Sacc.	Dimitrova & Dankova 2009 Hinkova 1954, 1955a; Aleksandrov 1970	16 8	soil soil	Hu	
69.	* <i>Peziza brunneoatra</i> Desm.	Aleksandrov 1970, 1971 SOMF (unpubl.)	8 16	soil soil	Hu	EN
70.	<i>Peziza buxea</i> Quél.	Aleksandrov 1970, 1971	8	soil	Hu	
71.	<i>Peziza cerea</i> Sowerby  Syn. <i>Plicaria muralis</i> (Sowerby) Rehm	Hinkova 1954, 1955a; Aleksandrov 1970; Gyosheva 2000; Dankova 2006 Hinkova 1961; SOMF (unpubl.) Hinkova 1958a, b SOMF (unpubl.)	8 6 15 17	soil soil soil wall	Hu	
72.	<i>Peziza clypeata</i> Schwein.	Kuthan & Kotlaba 1981, 1989	1	soil	Hu	
73.	<i>Peziza depressa</i> Pers.	Dimitrova & Assyov 2004	6	soil	Hu	
74.	<i>Peziza domiciliana</i> Cooke  Syn. <i>Peziza adae</i> J. Sadler ex Cooke	Dankova 2006 SOMF (unpubl.) Hinkova & Stoichev 1983	16 17 16	wall soil wall	Hu	
75.	<i>Peziza echinospora</i> P. Karst.  Syn. <i>Peziza anthracophila</i> Dennis Syn. <i>Plicaria echinospora</i> (P. Karst.) Rehm	Kuthan & Kotlaba 1981, 1989 Fakirova & Dimitrova 1999 Hinkova 1954, 1955a; Aleksandrov 1968 Dankova 2006 Dimcheva & Stoichev 1987 Hinkova 1962 Hinkova 1958a, b	1 5 8 15 14 2 15	soil soil soil, wood soil soil soil wood, fireplace	Carb	



Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV	
76.	<i>Peziza fimeti</i> (Fuckel) Seaver	Fakirova 1970	5, 8, 16	dung	C		
	Syn. <i>Plicaria fimeti</i> (Fuckel) Rehm	Hinkova 1954, 1955a, b; Aleksandrov 1970, 1971	8	dung			
77.	<i>Peziza hortensis</i> P. Crouan & H. Crouan	Dimitrova & Dankova 2009	8	soil	Hu		
78.	<i>Peziza howsei</i> (Boud.) Donadini				C		
	Syn. <i>Peziza emileia</i> Cooke	Dankova 2006	5, 10	dung			
		Hinkova & Fakirova 1970	16	soil			
79.	<i>Peziza irina</i> Quél.	Vanev & Reid 1986	17	soil	Hu		
80.	<i>Peziza lilacina</i> (Boud.) Sacc. & Traverso				Carb.		
	Syn. <i>Paxina lilacina</i> Boud.	Stoichev & Dimcheva 1988	14	fireplace			
81.	<i>Peziza lobulata</i> (Velen.) Svrček	Dimitrova & Dankova 2009	15	fireplace	Carb		
82.	* <i>Peziza michelii</i> (Boud.) Dennis	Kuthan & Kotlaba 1981, 1989	1	soil	Hu	EN	
		Dimitrova 2006	5	soil			
		Dankova 2006	8	soil			
		Hinkova & Fakirova 1970	16	soil			
83.	<i>Peziza micropus</i> Pers.	Kuthan & Kotlaba 1989	5	wood	LeS		
		Dankova 2006	6	wood			
		Hinkova & Stoichev 1983	18	wood			
84.	<i>Peziza moseri</i> Aviz.-Hersh. & Nemlich				Carb		
	Syn. <i>Aleuria lilacina</i> Boud.	Dimcheva & Stoichev 1987; Stoichev & Dimcheva 1988	14	fireplace			
85.	<i>Peziza nivalis</i> (R. Heim & L. Remy) M.M. Moser	Dankova 2006; Dimitrova & Dankova (in press)	14	soil	Hu		
86.	<i>Peziza ostracoderma</i> Korf	Dimitrova & Dankova 2009	16	soil	Hu		
	Syn. <i>Peziza atrovinosa</i> Cooke & W.R. Gerard	Aleksandrov 1971	8	soil			
87.	<i>Peziza praetervisa</i> Bres.	Aleksandrov 1970, 1971	8	fireplace	Carb		
	Syn. <i>Paxina praetervisa</i> Bres.	Stoichev & Dimcheva 1988	14	fireplace			
88.	<i>Peziza repanda</i> Pers.	Hinkova & Drumeva 1978; Vanev & Reid 1986	5	needles	Hu, St		
		Dankova 2006	6	soil			
		Gyosheva 1998	7	soil			
		Dimcheva 1983	5, 17	soil			
		Hinkova & Stoichev 1983	18	litter			
89.	* <i>Peziza saniosa</i> Schrad.	Kuthan & Kotlaba 1981	1	soil	Hu	VU	
		Hinkova 1954, 1955a	8	soil			
		SOMF (unpubl.)	2	soil			
		Hinkova 1958a, b	15	soil			
90.	<i>Peziza septiatria</i> Cooke	Hinkova 1965	15	fireplace	Carb		
91.	<i>Peziza septiatrella</i> Sacc.	Aleksandrov 1968; Hinkova 1954, 1955a	8	soil	Hu		
92.	<i>Peziza subviolacea</i> Svrček	Kuthan & Kotlaba 1981	1	fireplace	Carb		
		Dimitrova & Assyov 2004	17	soil			
93.	<i>Peziza succosa</i> Berk.	Kuthan & Kotlaba 1981, 1989	1	soil	Hu		
		Dimitrova 2002	4	soil			
		Dimitrova 2006	5	soil			
		Dankova 2006	8	soil			
		Hinkova & Fakirova 1970	16	soil			
		Syn. <i>Galactinia succosa</i> (Berk.) Sacc.	Hinkova 1962	2			soil
		Hinkova 1958a	15	soil			
94.	<i>Peziza varia</i> (Hedw.) Fr.	Dimitrova 2006	8	soil	Hu		
95.	<i>Peziza vesiculosa</i> Bull.	Dankova 2006	1	soil	C		
		Barzakov 1926	6	soil			
		Gyosheva & Vassilev 1994	7	soil			

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
		Hinkova 1954, 1955a	8	soil, wood		
		Hinkova & Aleksandrov 1971	16	dung		
		Gyosheva & Zaimova 1996	17	soil		
96.	<i>Peziza violacea</i> Pers.	Aleksandrov 1968, 1970	8	fireplace	Carb	
97.	<i>Plicaria leiocarpa</i> (Curr.) Boud. Syn. <i>Plicariella leiocarpa</i> (Curr.) Boud.	Aleksandrov 1970	8	soil	Carb	
98.	<i>Plicaria pustulata</i> Fuckel	Dimitrova 1994b	9	soil	Hu	
99.	<i>Plicariella fuliginea</i> Rehm	Hinkova 1958a, b	15	fireplace	Carb	
100.	<i>Pustularia vesiculosa</i> (Bull.) Fuckel var. <i>Stevensoniana</i> (Ellis) Keissl. Syn. <i>Pustularia Stevensoniana</i> Ellis	Hinkova 1955b	8	wood		
101.	* <i>Sarcosphaera coronaria</i> (Jacq.) J. Schröt.  Syn. <i>Sarcosphaera eximia</i> (Jdurieu & Lév.) Maire Syn. <i>Pustularia coronaria</i> (Jacq.) Rehm	Gyosheva-Bogoeva 1984; Gyosheva 1991 Barzakov 1931 Hinkova & Stoichev 1983 Hinkova 1961	7 17 7 17	soil soil soil soil	Hu	VU
<b>Pyronemataceae</b>						
102.	<i>Aleuria aurantia</i> (Pers.) Fuckel       Syn. <i>Peziza aurantia</i> Pers.	Hinkova 1962 Barzakov 1926 Hinkova 1965 Aleksandrov 1968, 1969 Dimitrova & Assyov 2004 SOMF (unpubl.) Hinkova 1958a, b Hinkova & Fakirova 1970 Barzakov 1933; Hinkova 1953, 1954	2 4 5 8 9 14 15 16 8	soil soil soil soil soil soil soil soil	Hu	
103.	* <i>Aleuria bicucullata</i> (Boud.) Gillet	Hinkova 1953 Hinkova 1962 Hinkova 1958a, b; SOMF (unpubl.) Hinkova & al. 1979	17 2 15 17	soil soil soil	Hu	EN
104.	<i>Aleuria rhenana</i> Fuckel	Hinkova & al. 1979	17	soil	Hu	
105.	<i>Anthracobia macrocystis</i> (Coke) Boud.	Hinkova & Fakirova 1970	16	fireplace	Carb	
106.	<i>Barlaea asperella</i> (Rehm) Sacc. Syn. <i>Plicariella asperella</i> (Rehm) Migula	Hinkova 1955a	8	soil	Hu	
107.	<i>Cheilymenia fimicola</i> (De Not. & Bagl.) Dennis Syn. <i>Cheilymenia coprinaria</i> (Cooke) Boud.	Fakirova 1968	8	dung	C	
108.	<i>Cheilymenia granulata</i> (Bull.) J. Moravec Syn. <i>Ascophanus granulatus</i> (Bull.) Speg. Syn. <i>Coprobria granulata</i> (Bull.) Boud.  Syn. <i>Peziza granulata</i> Bull.	Fakirova 1968 Dimitrova 2002 Fakirova 1968 Fakirova 1970; Hinkova & al. 1979 Hinkova 1954, 1955a	8, 19 5 15 17 8	dung dung dung dung dung	C	
109.	<i>Cheilymenia pulcherrima</i> (H. Crouan & P. Crouan) Boud.	Fakirova 1969	17	dung	C	
110.	<i>Cheilymenia stercorea</i> (F.H. Wigg.) Boud. Syn. <i>Lachnea stercorea</i> (Pers.) Cooke	Hinkova & Ivanova 1965 Hinkova 1954, 1955a Hinkova 1965	8, 15 8 15	dung dung dung	C	
111.	<i>Cheilymenia theleboloides</i> (Alb. & Schwein.) Boud.	Fakirova 1968	6	dung	C	
112.	* <i>Flavoscypha cantharella</i> (Fr.) Harmaja Syn. <i>Otidea concinna</i> (Pers.) Sacc.	Kuthan & Kotlaba 1989 Hinkova & Fakirova 1970 Gyosheva & Zaimova 1996	1 16 17	soil soil soil	Hu	EN
113.	<i>Geopora arenicola</i> (Lév.) Kers				Hu	



Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
	Syn. <i>Sarcosphaera arenicola</i> (Lév.) Massee	Hinkova 1961	1	soil		
114.	<i>Geopora arenosa</i> (Fuckel) S. Ahmad				Hu	
	Syn. <i>Sepultaria arenosa</i> (Fuckel) Boud.	Aleksandrov 1971	8	soil		
115.	<i>Geopora tenuis</i> (Fuckel) T. Schumah.				Hu	
	Syn. <i>Sepultaria tenuis</i> (Fuckel) Boud.	Kuthan & Kotlaba 1981, 1989	1	soil		
116.	<i>Geopyxis alpina</i> Höhn.	Hinkova 1958a, b	15	soil	Hu	
117.	<i>Geopyxis carbonaria</i> (Alb. & Schwein.) Sacc.	Aleksandrov 1968	8	fireplace	Carb	
		Hinkova 1958a, b	15	fireplace		
		Dimitrova & Assyov 2004	17	soil		
118.	<i>Humaria euchroa</i> (P. Karst.) Sacc.	Hinkova 1958a	15	soil	Hu	
119.	<i>Humaria hemisphaerica</i> (F.H. Wigg.) Fuckel	Fakirova & Dimitrova 1999; Dimitrova 2002	5	soil	Hu	
		Dimitrova 2002	7	soil		
		Aleksandrov 1970; Dimitrova & Assyov 2004	8	soil		
		Dimitrova & Assyov 2004	14, 17	soil		
		Hinkova & Fakirova 1970	16	soil		
	Syn. <i>Lachnea hemisphaerica</i> (F.H. Wigg.) Gillet	Hinkova 1962	2	soil		
		Hinkova 1954	8	soil		
		Hinkova 1958a, b	15	soil		
	Syn. <i>Mycolachnea hemisphaerica</i> (F.H. Wigg.) Maire	Kuthan & Kotlaba 1981, 1989	1	soil		
120.	<i>Humaria macrospora</i> Velen.	Dimitrova 1998	16	wood	LeS	
121.	<i>Lachnea hystrix</i> (Saut.) Sacc.	Hinkova 1965	15	wood	LeS	
122.	<i>Lachnea insignis</i> (H. Crouan & P. Crouan) Sacc.	Hinkova 1954, 1955a	8	dung	C	
123.	<i>Lamprospora areolata</i> Seaver	Aleksandrov 1971	8	soil-moss	Br	
124.	<i>Lamprospora crechqueraultii</i> (H. Crouan & P. Crouan) Boud. var. <i>macrantha</i> Boud.	Aleksandrov 1971	8	peat bog	Br	
125.	<i>Lamprospora crouanii</i> (Cooke) Seaver				Br	
	Syn. <i>Plicariella miniata</i> (H. Crouan & P. Crouan) Lindau	Hinkova 1955a	8	soil- moss		
126.	<i>Melastiza chateri</i> (W.G. Sm.) Boud.	Aleksandrov 1970	8	soil	Hu	
		Stoichev & Dimcheva 1987	17	soil		
127.	<i>Melastiza cornubiensis</i> (Berk. & Broome) J.Moravec				Hu	
	Syn. <i>Lachnea miniata</i> (Fuckel) Sacc.	Hinkova 1962	2	soil		
		Hinkova 1954, 1955a, b	8	soil		
		Hinkova 1958a, b	15	soil		
128.	* <i>Neottiella albocincta</i> (Berk. & M.A. Curtis) Sacc.	Hinkova 1965	15	soil	Hu	CR
129.	<i>Neottiella rutilans</i> (Fr.) Dennis	Fakirova & Dimitrova 1999	5	soil	Hu	
130.	<i>Neottiella vivida</i> (Nyl.) Dennis	Hinkova 1965	6	soil	Hu	
		Aleksandrov 1970, 1971	8	soil		
131.	<i>Octospora convexula</i> (Pers.) L.R. Batra				Hu	
	Syn. <i>Humaria convexula</i> (Pers.) Rehm	Klika 1926	15	soil		
132.	<i>Octospora humosa</i> (Fr.) Dennis	Aleksandrov 1971	8	soil	Hu	
		Gyosheva 2003	15	soil		
		Dimitrova & Assyov 2004	17	soil		
133.	<i>Octospora leucoloma</i> Hedw.	Dimcheva 1983	5, 15, 17	soil	Hu	
		Stoichev & Dimcheva 1987	17			
134.	<i>Octospora rubens</i> (Boud.) M.M. Moser	Aleksandrov 1970, 1971	8	soil	Hu	
		Hinkova & Aleksandrov 1971	16	soil		
135.	* <i>Otidea alutacea</i> (Pers.) Massee	Hinkova & Stoichev 1983	3	soil	Hu	VU
		Fakirova & Dimitrova 1999	5	soil		
		Dimitrova 2006	8	soil		
		Dimitrova 2002	15	soil		
136.	<i>Otidea auricula</i> (Schaeff.) Rehm	Hinkova 1954, 1955a	8	wood	Hu, LeS	
		Hinkova & al. 1979	17	soil		

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
137.	<i>Otidea cochleata</i> (Huds.) Fuckel Syn. <i>Otidea umbrina</i> (Pers.) Bres.	Hinkova 1962	2	soil	Hu	
		Hinkova 1955a; Aleksandrov 1970	8	soil		
		Hinkova & Drumeva 1978	5	soil		
		Hinkova & Fakirova 1970	16	soil		
138.	<i>Otidea leporina</i> (Batch) Fuckel	Hinkova & al. 1979	17	soil	Hu	
		Aleksandrov 1970, 1971	8	soil		
139.	* <i>Otidea onotica</i> (Pers.) Fuckel	Gyosheva 1998; SOMF (unpubl.)	17	soil	Hu, LeS	VU
		Kuthan & Kotlaba 1981	1	soil		
140.	<i>Otidea propinquata</i> (P. Karst.) Harmaja	Hinkova 1954, 1955a	8	soil	Hu	
		Dimitrova & Assyov 2004	9	soil		
		Hinkova 1965	14	soil-moss		
		SOMF (unpubl.)	15	soil		
		Barzakov 1931; Dimitrova 2002	17	wood, soil		
		Dimitrova & Assyov 2004	17	soil		
141.	<i>Psilopezia nummularia</i> Berk.	Kuthan & Kotlaba 1989	1	limestone	Hu	
142.	<i>Pulvinula convexella</i> (P. Karst.) Pfister	Aleksandrov 1970, 1971	8	soil	Hu	
143.	<i>Pustularia vesiculosa</i> (Bull.) Fuckel var. <i>Stevensoniana</i> (Ellis) Keissl.	SOMF (unpubl.)	15	soil	LeS	
		Hinkova 1955b	8	wood		
144.	<i>Pyronema domesticum</i> (Sowerby) Sacc.	Hinkova 1961	6	wall	Carb	
		Hinkova & Aleksandrov 1971; Dimitrova 2002	16	fireplace		
145.	<i>Pyronema omphalodes</i> (Bull.) Fuckel	Hinkova 1954, 1955a; Aleksandrov 1970	8	fireplace	Carb	
		Hinkova 1958a, b	15	fireplace		
		Hinkova & Fakirova 1970; Dimitrova 2002	16	fireplace		
146.	<i>Ramsbottomia asperior</i> (Nyl.) Benkert & T. Schumach. Syn. <i>Sphaerospora asperior</i> (Nyl.) Sacc.	Hinkova 1954, 1955a; Aleksandrov 1970	8	fireplace	Hu	
		Aleksandrov 1971	8	soil-moss		
147.	<i>Scutellinia caucasica</i> Kullman & Raitv.	Dimitrova 1996b	8	soil	Hu	
148.	<i>Scutellinia cejpaii</i> (Velen.) Svrček Syn. <i>Lachnea hirta</i> (T. Schumach.) Sacc. Syn. <i>Scutellinia stenosperra</i> Le Gal	Barzakov 1929	5	soil	Hu, LeS	
		Hinkova 1958b	15	soil		
		Vanev & Reid 1986	5	wood		
149.	<i>Scutellinia cervorum</i> (Velen.) Svrček	Kuthan & Kotlaba 1981, 1989	1	soil	Hu	
150.	<i>Scutellinia crinita</i> (Bull.) Lambotte Syn. <i>Scutellinia scutellata</i> (L.) Lambotte var. <i>cervorum</i> (Velen.) Le Gal	Kuthan & Kotlaba 1981, 1989	1	soil	Hu	
151.	<i>Scutellinia crucipila</i> (Cooke & W. Phillips) J. Moravec Syn. <i>Cheilymenia crucipila</i> (Pers. : Fr.) Dennis				Hu	
		Fakirova & Dimitrova 1999	5	soil		
152.	<i>Scutellinia fimicola</i> J. Moravec	Fakirova 1972	17	dung	C	
153.	<i>Scutellinia nigrohirtula</i> (Svrček) Le Gal	Kuthan & Kotlaba 1981	1	rotten wood	LeS	
154.	<i>Scutellinia scutellata</i> (L.) Lambotte Syn. <i>Lachnea scutellata</i> (L.) Sacc. Syn. <i>Peziza scutellata</i> L.	Vanev & Reid 1996; SOMF (unpubl.)	5	soil, wood	LeS, Hu	
		Dimitrova 2002	7	rotten wood		
		Aleksandrov 1968; SOMF (unpubl.)	8	rotten wood		
		Rosnev & Stoichev 1985; Gyosheva 2003	15	dead wood		
		Hinkova & Fakirova 1970; Dimitrova 2002	16	wood		
		Hinkova 1954, 1955a	8	cones, wood		
		Hinkova 1958b	15	wood		
		Barzakov 1929	17	rotten wood		
155.	<i>Scutellinia setosa</i> (Nees) Kuntze Syn. <i>Ciliaria setosa</i> (Nees) Boud. Syn. <i>Lachnea setosa</i> (Nees) Cooke	Dimitrova 1996a	9	wood	LeS	
		Hinkova 1965	2	wood		
		Hinkova 1955b	8	wood		

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
156.	<i>Scutellinia subcervorum</i> Svrček	Kuthan & Kotlaba 1981	1	wood	LeS	
157.	<i>Scutellinia trechispora</i> (Berk. & Broome) Lambotte Syn. <i>Sphaerospora trechispora</i> (Berk. & Broome) Sacc.	Hinkova 1955b	6	leaves	St	
158.	<i>Scutellinia umbrorum</i> (Fr.) Lambotte	Kuthan & Kotlaba 1989	1	soil	Hu	
		Aleksandrov 1971	8	soil soil		
		SOMF (unpubl.)	16			
		Stoichev & Dimcheva 1987	17	soil		
159.	<i>Sphaerospora brunnea</i> (Alb. & Schwein.) Svrček & Kubička	Kuthan & Kotlaba 1981, 1989	1	soil	Hu	
160.	<i>Tarzetia catinus</i> (Holmsk.) Korf & J.K. Rogers	SOMF (unpubl.)	5	soil	Hu	
		Dimitrova 2006	8	soil		
	Syn. <i>Geopyxis catinus</i> (Holmsk.) Sacc.	Dimitrova 1998	8	soil		
	Syn. <i>Peziza pustulata</i> (Hedw.) Pers.	Barzakov 1929	along Danube	soil		
	Syn. <i>Pustularia catinus</i> (Holmsk.) Fuckel	Hinkova & Aleksandrov 1971	16	soil		
161.	<i>Tarzetia cupularis</i> (L.) Svrček	Dimitrova 2002	4	soil	Hu	
		Gyosheva 2003	15	soil		
	Syn. <i>Peziza cupularis</i> L.	Hinkova 1950	6	soil		
		Hinkova 1954, 1955a	8	soil		
	Syn. <i>Pustularia cupularis</i> (L.) Fuckel	Aleksandrov 1970	8	soil		
		Hinkova & Fakirova 1970	16	soil		
162.	<i>Tarzetia gaillardiana</i> (Boud.) Korf & J.K. Rogers				Hu	
	Syn. <i>Geopyxis gaillardiana</i> (Boud.) Sacc. & D. Sacc.	Hinkova 1958a, b	15	soil		
163.	<i>Tricharina gilva</i> (Berk. ex Cooke) Eckblad	Fakirova & Dimitrova 1999	5	soil	Carb	
164.	<i>Tricharina praecox</i> (P. Karst.) Dennis	Aleksandrov 1971	8	charred wood	Carb	
165.	<i>Trichophaea abundans</i> (P. Karst.) Boud.	Aleksandrov 1970	8	charred wood	Carb	
166.	<i>Trichophaea gregaria</i> (Rehm) Boud.	Aleksandrov 1971	8	burnt soil	Carb	
167.	<i>Trichophaea hemisphaerioides</i> (Mouton) Graddon				Carb	
	Syn. <i>Lachnea hemisphaerioides</i> Mouton	Hinkova 1955a	8	fireplace		
168.	<i>Trichophaea hybrida</i> (Sowerby) T. Schumach.	Dimitrova & Assyov 2004	17	soil	Carb	
169.	<i>Trichophaea woolhopeia</i> (Cooke & W. Phillips) Arnould	Kuthan & Kotlaba 1989	1	soil	Hu	
<b>Rhizinaceae</b>						
170.	<i>Rhizina undulata</i> Fr.	Ivanov & Dimitrov 1922	no data		LeP	
		Ivanov & Dimitrov 1923; Ivanov & Patev 1925	5	wood		
<b>Sarcoscyphaceae</b>						
171.	* <i>Microstoma protractum</i> (Fr.) Kanouse				Hu	EN
	Syn. <i>Sarcoscypha hiemalis</i> (Nees & Bernstein) J. Schröt.	Hinkova 1954, 1955a; Aleksandrov 1970	8	soil		
172.	* <i>Pithya cupressina</i> Fuckel	Hinkova 1965	3	wood	LeS	CR
173.	<i>Pithya vulgaris</i> Fuckel	Hinkova 1965	15	needles	LeS, Ad	
174.	<i>Sarcoscypha coccinea</i> (Jacq.) Sacc.	Hinkova 1962	2	wood	LeS	
		Barzakov 1939; Aleksandrov 1968; Hinkova 1954	8	wood		
		SOMF (unpubl.)	14	wood		
		Hinkova 1958b	15	wood		
		Dimitrova 2002	16	wood		
		Stoichev & Dimcheva 1982	18	wood		
	Syn. <i>Peziza coccinea</i> Jacq.	Barzakov 1926	5, 8	soil		

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
<b>Sarcosomataceae</b>						
175.	<i>*Plectania melaena</i> (Fr.) Paden Syn. <i>Pseudoplectania vogesiaca</i> Seaver	Aleksandrov 1969 SOMF (unpubl.)	8 20	wood wood	LeS	CR
176.	<i>Pseudoplectania nigrella</i> (Pers.) Fuckel	Hinkova & Drumeva 1978 Barzakov 1926 Aleksandrov 1969, 1970, 1971 Dimcheva & Stoichev 1987 Hinkova 1958a, b Hinkova & al. 1983 Dimcheva 1983	5 6 8 14 15 17 no data	soil soil soil soil-moss soil soil soil-moss	Br, Hu	
177.	<i>Pseudoplectania sphagnophila</i> (Pers.) Kreisel	Dimitrova & Assyov 2004	17	soil-moss	Br	
178.	<i>*Urnula craterium</i> (Schwein.) Fr.  Syn. <i>Peziza nigra</i> Petkoff, <i>P. craterium</i> Schwein. Syn. <i>Geopyxis craterium</i> (Schwein.) Rehm	Hinkova 1962 Dimcheva & Stoichev 1987; Gyosheva & al. 2006 Petkov 1943, 1950 Petkov 1943, 1950	2 14 4 4	soil soil wood wood	Hu, LeS	VU
<b>Tuberaceae</b>						
179.	<i>*Choiromyces meandriformis</i> Sacc. & Bizz.	Hinkova 1961 Georgiev 1906, Barzakov 1931, 1932	8 15	soil soil	Mr	EN
180.	<i>*Tuber aestivum</i> Vittad.	Hinkova 1965 Dimitrova & Gyosheva 2008	10 5	soil soil	Mr	EN
181.	<i>Tuber brumale</i> Vittad.	Dimitrova & Gyosheva 2008	2	soil	Mr	
182.	<i>Tuber excavatum</i> Vittad.	Dimitrova & Gyosheva 2008	2	soil	Mr	
183.	<i>*Tuber puberulum</i> Berk. & Broome	Hinkova & Stoichev 1983; Dimitrova & Gyosheva 2008	17	soil	Mr	EN
<b>Incertae Sedis</b>						
184.	<i>Coprotus argenteus</i> (Curr.) Waraitch Syn. <i>Ascophanus argenteus</i> (Curr.) Boud.	Fakirova 1968	8	dung	C	
185.	<i>Coprotus aurora</i> (P. Crouan & H. Crouan) K.S. Thind & Waraitch Syn. <i>Ascophanus aurora</i> (P. Crouan & H. Crouan) Boud.	Fakirova 1969 Fakirova 1968	7, 17 16	dung dung	C	
186.	<i>Coprotus granuliformis</i> (P. Crouan & H. Crouan) Kimbr. Syn. <i>Ascophanus granuliformis</i> (P. Crouan & H. Crouan) Boud.	Hinkova & Ivanova 1965 Fakirova 1970 Fakirova 1967	no data 1 8	dung dung dung	C	
187.	<i>Coprotus lacteus</i> (Cooke & W. Phillips) Kimbr. Syn. <i>Ascophanus lacteus</i> (Cooke & W. Phillips) W. Phillips	Fakirova 1970 Fakirova 1969	1, 10 19	dung dung	C	
188.	<i>Coprotus leucopocillum</i> Kimbr., Luck-Allen & Cain	Dimitrova 1994a	8	dung	C	
189.	<i>Coprotus sexdecimsporus</i> (P. Crouan & H. Crouan) Kimbr. & Korf Syn. <i>Ryparobius sexdecimsporus</i> (P. Crouan & H. Crouan) Sacc.	Fakirova 1969 Fakirova 1967, 1969 Fakirova 1968	4 8 16	dung dung dung	C	

Table 1. Continuation.

N	Families/Species	Sources	Floristic regions	Substrate	ETG	CV
190.	<i>Discina abietina</i> (Pers.) Rehm	Aleksandrov 1970	8	soil	Hu	
		Hinkova 1958a, b	15	soil		
191.	<i>Trichobolus zukalii</i> (Heimerl) Kimbr. Syn. <i>Thelebolus zukalii</i> Heimerl	Fakirova 1967	no data	dung	C	
		Fakirova 1970	5	dung		
		Fakirova 1974	15, 16	dung		

**Abbreviations:**

CV – Conservation value; CR – Critically Endangered; EN – Endangered; VU – Vulnerable; NT – Near Threatened.

ETG – Ecological-trophic groups: Ad – needle debris saprotrophs; S – cone saprotrophs; St – litter saprotrophs;

Hu – humus saprotrophs; LeS – wood saprotrophs; Br – moss saprotrophs; C – coprotrophs; Carb. – carbotrophs;

Mr – mycorrhizal fungi; LeP – wood parasites

## Results

The checklist includes 191 taxa belonging to 53 genera from *Pezizales* (180 species and two varieties from 12 families, and eight species *Incertae Sedis*). The greatest number of species is known from the following families: *Pyronemataceae* (68 species), *Pezizaceae* (44 species), and *Helvellaceae* (18 species). The genera with the greatest species diversity are: *Peziza* (37), *Helvella* (18), *Ascobolus* and *Scutellinia* (12).

The highest amount of species were collected and published from the following floristic regions (Table 1): Vitosha region (105), Pirin Mts (52), Rila Mts (50), Rhodopi Mts (43), Balkan Range (36), and the Black Sea Coast (30).

Depending on substrate, here are the cup-fungi belonging to 10 ecological-trophic groups (Table 1): needle-debris saprotrophs (Ad), cone saprotrophs (S) and litter saprotrophs (St) – 7 species altogether; wood saprotrophs (LeS) – 20 species; humus saprotrophs (Hu) – 104 species; coprotrophs (C) – 39 species; moss saprotrophs (Br) – 5 species; carbotrophs (Carb) – 21 species; mycorrhizal fungi (Mr) – 5 species and wood parasites (LeP) – 1 species. Some fungi have been registered on several different substrata and are included in more than one trophic group. Analysis of the published data (Table 1) showed that humus saprotrophs are represented by the greatest number of species, followed by coprotrophs, wood saprotrophs, and carbotrophs. This correlation reflects completely the special ecological features of the Discomycetes fungi from *Pezizales* (Arnolds 1981, Lisiewska 1993).

Thirty-two species of *Pezizales* reported from Bulgaria have conservation value (asterisked in the Table 1) and are included in the *Red list of fungi in Bulgaria* (Gyosheva & al. 2006). They are listed in the following categories: **Critically Endangered (CR)** – 5 species: *Helvella lactea*, *Hydnotrya tulasnei*, *Neottiella albocincta*, *Pithya cupressina*, *Plectanina melaena*; **Endangered (EN)** – 17 species: *Aleuria bicuculata*, *Choiromyces meandriformis*, *Gyromitra gigas*, *G. leucoxantha*, *Flavoscypha cantharella*, *Helvella ephippium*, *H. leucomelaena*, *H. pezizoides*, *H. phlebophora*, *Microstoma protractum*, *Pachyella babingtonii*, *Peziza brunneoatra*, *P. michelii*, *Sarcobolus beckii*, *Tuber aestivum*, *T. puberulum*, *Verpa conica*; **Vulnerable (VU)** – 8 species: *Discina ancilis*, *Disciotis venosa*, *Helvella atra*, *Otidea alutacea*, *O. onotica*, *Peziza saniosa*, *Sarcosphaera coronaria*, *Urnula craterium*; **Near Threatened (NT)** – 2 species: *Morchella elata*, *Ptychoverpa bohemia*.

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