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## Checklist of Bulgarian *Helotiaceae* (Ascomycetes)

### Abstract

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The present checklist of Bulgarian *Helotiaceae* includes 67 infrageneric taxa belonging to 20 genera. Their names published in the relevant literature on Bulgarian *Helotiaceae* are also given. The genus *Claussenomyces* and four species - *Allophylaria byssacea*, *Calycina italica*, *Claussenomyces* aff. *atrovirens* and *Heyderia pusilla* are reported as new to the country. Three new combinations are proposed: *Calycina italica*, *Hymenoscyphus kathiae*, *Hymenoscyphus monticola*.

### Introduction

The present paper offers a checklist of 67 infrageneric taxa (64 species, 2 varieties and 1 forma) from 20 genera of *Helotiaceae*, which have been found so far on the territory of Bulgaria. It comprises correct names of the species, the earlier names under which they are published in the Bulgarian mycological literature, the authors, who have published them, the substrates, on which they have been registered, and their distribution by floristic regions. As a result of revision of about 30 of the specimens of *Helotiaceae*, deposited in Mycological Collection of the Institute of Botany, Bulgarian Academy of Sciences (SOMF), H. O. Baral established the correct name for several incorrectly determined species. Also one genus, *Claussenomyces* Kirschst., and 4 species [*Allophylaria byssacea* (P. Karst.) P. Karst., *Calycina italica* (Sacc.) Baral, *Claussenomyces* aff. *atrovirens* and *Heyderia pusilla* (Alb. & Schwein.) Link] have been identified as new to Bulgaria (marked by an asterisk in the text).

The first species of *Helotiaceae* reported from Bulgaria is *Chlorociboria aeruginosa* (Klika 1926). Later on, Barsakov (1928, 1933) reported 3 species new for the country. Of special significance for the study of that fungus family is the work of Chinkova who, both on her own and as a co-author, has published about 30 species from the mountains of Vitosha, Lozen and Rila (Chinkova 1954, 1955, 1958, 1961, 1965; Chinkova & Alexandrov 1971; Chinkova & Fakirova 1970). Comprehensive research of the species composition, spreading and ecology of discomycetous fungi, and in particular of those from the *Helotiaceae* family, was carried out by Alexandrov. In a number of papers he reported 26 species of that family, most of them being new for the country (Alexandrov

1968, 1969, 1970, 1971). Vanev & Reid (1986) reported 5 species from the Balkan mountain and the Pirin mountain. Kuthan & Kotlaba (1981, 1988) reported 3 species from the Black Sea coast. Dimitrova (1994a, 1994b, 1995, 1996a, 1996b, 1997a, 1997b, 1997c, 1998a, 1998b, 2000; Fakirova & Dimitrova 1999) has published morphological and chorological data about 30 species of discomycetous fungi from the *Helotiaceae* family, new for Bulgaria.

Two species - *Gremmeniella abietina* and *Cenangium ferruginosum*, have been studied from a phytopathological point of view as diseases of coniferous plants (Zlatanov 1977; Horozov 1988; Rosnev 1988; Rosnev & Petkov 1986).

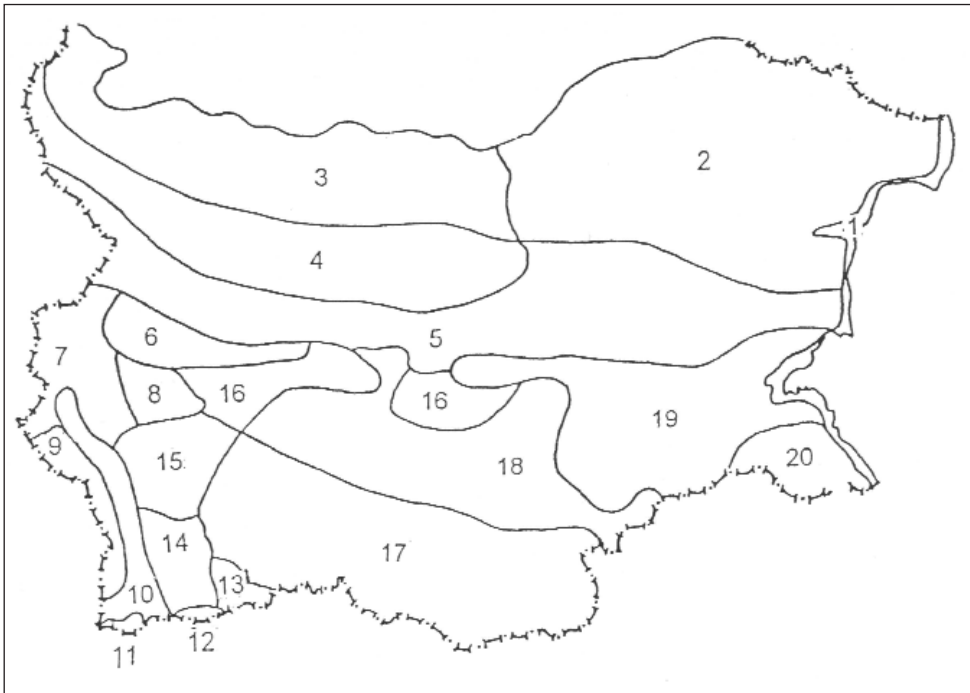


Fig. 1. Floristic regions of Bulgaria: **1** - Black Sea coast; **2** - North-East Bulgaria; **3** - Danubian Plain; **4** - Balkan foothill region; **5** - Balkan Mts.; **6** - Sofia region; **7** - Znepole region; **8** - Vitosha region; **9** - West Borderline Mts.; **10** - River Strouma; **11** - Belasitsa Mt.; **12** - Slavyanka Mt.; **13** - River Mesta; **14** - Pirin Mts.; **15** - Rila Mts.; **16** - Sredna Gora Mt.; **17** - Rhodopes Mts.; **18** - Thracian Lowland; **19** - Toundzha Hilly Country; **20** - Stranzha Mts.

## Material and methods

A study of the species composition, taxonomy and distribution of the Bulgarian *Helotiaceae* was carried out through a period of 1991-2003. The investigated material comprised personally collected specimens, and revised herbarium specimens from the SOMF. The material was identified in the laboratory of the same institute using routine

techniques. A limited amount of species is reported on the basis of literature data, due to the lack of available herbarium samples.

The checklist presents the taxa in alphabetical order. The nomenclature of the hosts and the floristic regions in Bulgaria (Fig. 1) are presented according to Flora of the P. R. Bulgaria. The taxonomic and nomenclature decisions pertaining of the Bulgarian *Helotiaceae* have been made in conformity with the researches of Baral (in Baral & Krieglsteiner 1985), Cannon & al. (1985), Carpenter (1981), Dennis (1956, 1964, 1978), Kirk & al. (2001), Ližon (1992) and to the Bioscience Database ([www.indexfungorum.org](http://www.indexfungorum.org)).

### List of Bulgarian *Helotiaceae*

(The floristic regions are given in brackets with Arabic numerals)

*Allophylaria* (P. Karst.) P. Karst.

\**A. byssacea* (P. Karst.) P. Karst.

On decaying leaves of *Calamagrostis arundinacea* (L.) Roth, [8], 24.10.1967, Alexandrov, det. Baral, SOMF 6 863 (as *Allophylaria sublicoides* (P. Karst.) Nannf., Dimitrova 2000).

*A. macrospora* (Kirschst. ex Jaap) Nannf.

On decorticated branches of *Populus tremula* L., [8], 24.10.1967, Chinkova, det. Dimitrova, SOMF 21 302.

*Antinoa* (P. Karst.) Velen.

*A. proximella* (P. Karst.) Velen.: *Helotium proximellum* P. Karst. - Dimitrova 1994a.

On fallen needles of *Picea abies* (L.) Karst.: [8], 10.10.1967, Chinkova, det. Dimitrova, SOMF 20 536; [8], 10.10.1995, leg.-det. Dimitrova, SOMF 22 062.

*Ascocoryne* J. W. Groves & D. E. Wilson

*A. sarcoides* (Jacq.) J. W. Groves & D. E. Wilson: *Coryne sarcoides* (Jacq.) Tul. & C. Tul. - Chinkova 1954, 1955, 1962; Stoichev & Dimcheva 1982, 1984.

On rotten branches and bark of *Fagus sylvatica* L.: [8], 10.04.1969, Alexandrov, det. Dimitrova, SOMF 6 926; [8], 1.09.1967, Alexandrov, det. Dimitrova, SOMF 8 371, 8 372; [17], 25.09.2001, Fakirova, det. Dimitrova, SOMF 25 606. On rotten wood of *Salix* sp., [15], 3.11.1955, Chinkova, det. Dimitrova, SOMF 5 253. On rotten wood, [2] - Chinkova 1962. On *Fagus* trunks and trunk of *Picea abies* (L.) Karst., [8] - Chinkova 1954. On *Fagus* trunks: [5] - Stoichev & Dimcheva 1984; [8] - Chinkova 1955.

*A. cylichnium* (Tul.) Korf

On rotten branches of *Salix* sp., [8], 30.09.1967, B. Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 454. On rotten trunk of *Tilia* sp., [2], 12.11.1957, Chinkova, det. Dimitrova, SOMF 316.

*Bisporella* Sacc.

*B. citrina* (Batsch) Korf & S. E. Carp.: *Calycella citrina* (Hedw.) Quél. - Chinkova & Alexandrov 1971; Vanev & Reid 1986; *Helotium citrinum* (Hedw.) Fr. - Barsakov 1928;

Chinkova 1955, 1958.

On rotten branches of *Alnus glutinosa* (L.) Gaertn., [16], 27.09.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 351. On *Fagus* wood: [5], 24.08.1997, Fakirova, det. Dimitrova, SOMF 22 154; [15], 30.10.1953, Chinkova, det. Chinkova & Dimitrova, SOMF 543. On rotten branch of *Salix* sp., [8], 4.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 457. On rotten wood: [5], 16.08.1997, Fakirova, det. Dimitrova, SOMF 22 153; [5], 25.08.1997, Fakirova, det. Dimitrova, SOMF 22 155. On rotten twigs: [8], 20.10.1967, Chinkova, det. Dimitrova, SOMF 21 629; [8], 16.10.1994, Fakirova, det. Dimitrova, SOMF 21 628. On bark, [6], 7.07.1987, Fakirova, det. Dimitrova, SOMF 21 155. On rotten *Fagus* wood - Barsakov 1928. On rotten wood of *Populus alba* L., [18] - Stoichev & Dimcheva 1984. On rotten twigs of *Rubus* sp., [5] - Vanev & Reid 1986.

**B. *subpallida*** (Rehm) Dennis: *Calycella subpallida* (Rehm) Dennis - Alexandrov 1968.

On decorticated wood of: *Corylus avellana* L., [8], 10.08.1991, leg.-det. Dimitrova, SOMF 21 516; *Juglans regia* L., [14], 20.11.1967, Chinkova & Drumeva, det. Dimitrova, SOMF 14 402. On decorticated wood of *Carpinus betulus* L., [8] - Alexandrov 1968.

**"*Calycella*" *terrestris*** (Boud.) Le Gal

On roots of graminaceous plant, [16], 18.09.1968, Chinkova & Fakirova, det. Chinkova & Dimitrova, SOMF 7 046.

***Calycina*** Nees ex Gray

**C. *conorum*** (Rehm) Baral: *Pezizella chionea* (Fr.) Dennis - Alexandrov 1968.

On fallen cones of: *Pinus mugo* Turra, [8], 29.08.1967, Chinkova & Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 216; *P. sylvestris* L.: [8], 6.05.1966, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 378; [8], 28.04.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 102.

**C. *herbarum*** (Pers. : Fr.) Gray: *Helotium herbarum* (Pers. : Fr.) Fr. - Nannizzi 1938; Chinkova 1961; Alexandrov 1971.

On dead stems of: *Hypericum maculatum* Crantz, [8], 16.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 777; *Urtica dioica* L.: [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 077; [16], 3.10.1975, Chinkova & Drumeva, det. Chinkova, Drumeva & Dimitrova, SOMF 13 555; *Sambucus ebulus* L., [15], 30.10.1953, Chinkova, det. Chinkova & Dimitrova, SOMF 544; *Urtica dioica*, [5] - Nannizzi 1938.

**\**Calycina italica*** (Sacc.) Baral **comb. nov.**

Basionym: *Helotium trabinellum* var. *italicum* Saccardo (as "*Helotium italicum*"), Sylloge Fungorum 8: 246 (1889).

*Phaeohelotium italicum* (Sacc.) Dennis, Kew Bull. 25: 355 (1971).

On branches of *Prunus* sp., [8], 3.10.1991, Dimitrova, det. Baral, SOMF 20 538 (as *Belonium subcarneum* Schumach., Dimitrova 1994a).

Note: The species was described by Dennis (1956: 107) as "*Helotium spec. 1*" and later (1971) identified with Saccardo's taxon. *C. italica* is very common in Central Europe in autumn on corticated twigs of *Quercus* and *Carpinus*, and it is not understood why in

the literature there appears only one badly described taxon available, of which type material could not even be traced according to Dennis (1971).

- C. parilis** (P. Karst.) O. Kuntze: *Pezizella parilis* (P. Karst.) Dennis - Alexandrov 1969.  
On rotten branches of *Betula pendula* Roth, [8], 15.11.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 586.
- C. phyllophila** (Desm.) Baral  
On fallen leaves and petioles of *Betula pendula* Roth, [8], 15.11.1967, Alexandrov, det. Dimitrova, SOMF 6 580.  
Note: Verkley (1999: 147) found amyloid asci of the *Hymenoscyphus*-type in the type material of *C. phyllophila*, and concluded that this taxon is a member of *Hymenoscyphus*, perhaps close to *H. caudatus*. However, a study of the very same type material showed inamyloid asci, and also the other features fully fit to the interpretation of Dennis (1956: 95) and Baral (in Baral & Krieglsteiner 1985).
- C. subtilis** (Fr.) Baral: *Pezizella subtilis* (Fr.) Dennis - Chinkova 1965.  
On fallen needles of *Picea abies* (L.) P. Karst.: [8], 10.10.1995, leg.-det. Dimitrova, SOMF 22 065, 22 066; [15], 30.08.1955, Chinkova, det. Chinkova & Dimitrova, SOMF 4 457.
- Calycina** sp.  
On decorticated wood, [8], 3.06.1969, Chinkova, det. Baral, SOMF 21 003 (as *Crocicreas complicatum* (P. Karst.) S. E. Carp., Dimitrova 1997b).

#### **Cenangium** Fr.

- C. ferruginosum** Fr.: *Cenangium abietis* (Pers.) Duby - Zlatanov 1977; Horozov 1988; Rosnev 1988.  
On dead branches and bark of *Pinus sylvestris* L.: [8], 25.02.1966, Chinkova & Alexandrov, det. Chinkova, Alexandrov & Dimitrova, SOMF 5 316; [8], 21.04.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 395; [8], 15.04.1995, Fakirova, det. Dimitrova, SOMF 21 625; [15], 8.05.1954, Chinkova, det. Chinkova & Dimitrova, SOMF 5 066; [17], 10.04.1982, Vanev & Reid, det. Dimitrova, SOMF 21 165. On dead branches of *Pinus radiata* D. Don, [1] - Zlatanov 1977. On dead branches of: *Pinus sylvestris* L. and *P. nigra* Arn., [5, 17] - Horozov 1988; *P. nigra*, [6] - Rosnev 1988.

#### **Chlorociboria** Seaver ex Ramamurthi & al.

- C. aeruginascens** (Nyl.) Kanouse ex Ramamurthi & al.: *Chlorosplenium aeruginascens* (Nyl.) P. Karst. - Fakirova & al., 2000.  
On rotten branches of: *Quercus* sp., [20], 24.10.1968, Chinkova & Fakirova, det. Dimitrova, SOMF 7 012; *Taxus baccata* L., [8], 22.04.1966, Chinkova & Alexandrov, det. Chinkova & Alexandrov, SOMF 5 290. On rotten wood of: *Fagus sylvatica* L., [17], 25.05.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 216; *Picea abies* (L.) P. Karst., [8], 31.05.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 464. On dead *Fagus* wood, [5] - Fakirova & al. 2000.
- C. aeruginosa** (Pers.) Seaver ex Ramamurthi & al.: *Chlorosplenium aeruginosum* (Oeder) De Not. - Alexandrov 1968; Barsakov 1933; Chinkova 1954, 1962; Klika 1926.  
On rotten stub of *Tilia* sp., [2], 12.11.1957, Chinkova, det. Dimitrova, SOMF 129. On rotten branches of *Carpinus betulus* L.: [2] - Chinkova 1962; [8] - Alexandrov 1968. On

dry branch, [8] - Barsakov 1933. On rotten pine and deciduous wood, [8] - Chinkova 1954. On rotten wood of *Fagus sylvatica* L., [15] - Klika 1926.

\**Claussenomyces* Kirschst.

\**Claussenomyces* sp. aff. *atrovirens*

On decorticated wood of *Picea abies* (L.) P. Karst., [17], 26.09.1995, Dimitrova, det. Baral, SOMF 21 729 (as *Durella connivens* (Fr.) Rehm, Dimitrova 1997a).

*Crocicreas* Fr.

**C. amenti** (Batsch) S. E. Carp.: *Hymenoscypha amenti* (Batsch) W. Phillips -Chinkova 1955; *Pezizella amenti* (Batsch) Dennis - Alexandrov 1968.

On catkins of : *Salix cinerea* L., [8], 6.03.1966, - Chinkova & Alexandrov, det. Chinkova, Alexandrov & Dimitrova, SOMF 5 347; *Salix* sp.: [8], 4.05.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 389; [8], 6.05.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 097. On fallen catkins of *Salix caprea* L., [8] - Chinkova 1955. On fallen catkins of *S. caprea* and *S. purpurea* L., [8] - Alexandrov 1968.

**C. calathicola** (Rehm) S. E. Carp.: *Phialea calathicola* (Rehm) Sacc. - Alexandrov 1971.

On capitulae of: *Cirsium appendiculatum* Griseb.: [8], 23.08.1968, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 088; [8], 29.07.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 466; *Cirsium* sp.: [8], 3.07.1968, Chinkova, det. Dimitrova, SOMF 21 162; [8], 28.06.1967, Chinkova, det. Dimitrova, SOMF 21 183.

**C. complicatum** (P. Karst.) S. E. Carp.

On decorticated wood of *Salix* sp., [8], 5.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 451. On decorticated deciduous twigs, [8], 3.06.1969, Chinkova, det. Dimitrova, SOMF 21 290.

**C. coronatum** (Bull.) S. E. Carp.: *Cyathicula coronata* (Bull.) De Not. ex P. Karst. - Chinkova 1965.

On decaying herbaceous stems: [5], 14.10.1962, Chinkova, det. Chinkova & Dimitrova, SOMF 2 791; [15], 19.10.1994, leg.-det. Dimitrova, SOMF 21 496.

**C. cyathoideum** (Bull. ex Mérat) S. E. Carp. **var. cyathoideum**: *Hymenoscypha cyathoidea* (Bull.) W. Phillips - Chinkova 1955; *Phialea cyathoidea* (Bull.) Gillet - Alexandrov 1969; Chinkova & Fakirova 1970.

On dry stems of: *Angelica pančičii* Vand., [8], 19.06.1979, Chinkova & Drumeva, det. Chinkova, Drumeva & Dimitrova, SOMF 14 388; *Angelica* sp.: [8], 29.08.1967, Alexandrov, det. Dimitrova, SOMF 24 978; [15], 22.07.1993, leg.-det. Dimitrova, SOMF 21 500; *Carex* sp., [16], 19.06.1991, leg.-det. Dimitrova, SOMF 20 791; *Cicerbita alpina* (L.) Wallr., [15], 9.07.1996, leg.-det. Dimitrova, SOMF 22 033; *Cirsium appendiculatum* Griseb.: [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 074; [8], 28.06.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 078; [14], 19.06.1980, Chinkova & Drumeva, det. Chinkova, Drumeva & Dimitrova, SOMF 16 199; *Cirsium* sp.: [8], 19.10.2001, leg.-det. Dimitrova, SOMF 25 561; [16], 30.05.1968, Chinkova & Fakirova, det. Chinkova, Fakirova & Dimitrova, SOMF 6 912; *Clematis vitalba* L., [16], 20.06.1998, Fakirova, det. Dimitrova, SOMF 22 191; *Epilobium angustifolium* L., [8], 13.09.1998, Fakirova, det. Dimitrova, SOMF

- 25 634; *Epilobium* sp., [8], 28.06.1967, Fakirova, det. Dimitrova, SOMF 21 195; *Filipendula ulmaria* (L.) Maxim., [8], 20.06.1999, Fakirova, det. Dimitrova, SOMF 24 965; *Galium* sp., [5], 16.06.1994, leg.-det. Dimitrova, SOMF 21 639; *Lysimachia vulgaris* L., [8], 19.07.1998, Fakirova, det. Dimitrova, SOMF 22 209; *Mentha* sp., [16], 2.07. 1992, leg.-det. Dimitrova, SOMF 21 157; *Petasites albus* (L.) Gaertn., [15], 28.05.1994, leg.-det. Dimitrova, SOMF 21 497; *Ribes uva-crispa* L., [8], 28.06.1967, Fakirova, det. Dimitrova, SOMF 20 790; *Rumex alpinus* L., [8], 3.09.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 417; *Rumex* sp., [15], 9.07.1996, leg.-det. Dimitrova, SOMF 21 121; *Sambucus ebulus* L., [11], 10.05.1994, leg.-det. Dimitrova, SOMF 21 473, 21 474; *Stellaria* sp., [9], 23.06.1991, leg.-det. Dimitrova, SOMF 21 172; *Urtica dioica* L.: [5], 14.05.1966, Chinkova, det. Alexandrov & Dimitrova, SOMF 5 283; [9], 23.06.1991, leg.-det. Dimitrova, SOMF 20 810; [14], 24.06.1980, Chinkova & Drumeva, det. Chinkova, Drumeva & Dimitrova, SOMF 16 398; *Verbascum longifolium* L., [8], 6.07.2001, leg.-det. Dimitrova, SOMF 25 559; *Verbascum* sp., [8], 3.08.1994, Fakirova, det. Dimitrova, SOMF 21 660; [17], 17.06.2003, leg.-det. Dimitrova, SOMF 25 609. On dry herbaceous stems of *Apiaceae*: [8], 15.07.1990, leg.-det. Dimitrova, SOMF 20 792; [15], 22.09.1994, leg.-det. Dimitrova, SOMF 21 498; [16], 15.06.1991, leg.-det. Dimitrova, SOMF 20 792. On dry herbaceous stems: [7], 23.06.1991, leg.-det. Dimitrova, SOMF 21 172; [8], 16.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 441; [8], 8.10.1993, leg.-det. Dimitrova, SOMF 21 333; [11], 10.05.1994, leg.-det. Dimitrova, SOMF 21 475, 21 476, 21 477, 21 478; [15], 22.07.1993, leg.-det. Dimitrova, SOMF 21 330, 21 331, 21 499; [16], 19.06.1991, leg.-det. Dimitrova, SOMF 20 791. On petioles of *Caltha palustris* L., [8], 29.05.1969, Chinkova, det. Alexandrov & Dimitrova, SOMF 7 952. On capitulae of *Tanacetum vulgare* L., [8], 7.07.1991, Fakirova, det. Dimitrova, SOMF 21 198. On rotten stems of *Angelica* sp., [8] - Chinkova 1955.
- C. cyathoides var. cacaliae** (Pers.) S. E. Carp.  
On dry stems of *Sambucus ebulus* L., [5], 23.07.1996, Fakirova, det. Dimitrova, SOMF 22 078.
- C. cyathoides var. pteridicola** (H. Crouan & P. Crouan) S. E. Carp.  
On stems of *Pteridium aquilinum* (L.) Kuhn., [11], 10.05.1994, leg.-det. Dimitrova, SOMF 21 466.
- C. cf. nigrofuscum** (Rehm) S. E. Carp.  
On dry stems of *Verbascum* sp., [5], 17.10.1996, Fakirova, det. Dimitrova, SOMF 22 178.
- C. pallidum** (Velen.) S. E. Carp.  
On stems of *Urtica dioica* L., [8], 20.09.1967, Alexandrov, det. Dimitrova, SOMF 7 085.
- C. starbaeckii** (Rehm) S. E. Carp.  
On decaying petioles of *Caltha laeta* Schött, Nym & Kotschy, [8], 30.05.1969, Chinkova, det. Dimitrova, SOMF 20 996. On decaying stems of: *Cardamine* sp., [8], 30.05.1969, Petrov, det. Dimitrova, SOMF 7 909; *Ranunculus polyanthemus* L.: [8], 2.05.1966, Chinkova, det. Chinkova, Alexandrov & Dimitrova, SOMF 5 363; [8], 6.06.1993, leg.-det. Dimitrova, SOMF 21 336; *R. repens* L., [8], 10.10.1995, leg.-det. Dimitrova, SOMF 22 050. On decaying stems and petioles of *Epilobium angustifolium*

L., [8], 28.05.1969, Chinkova, det. Alexandrov & Dimitrova, SOMF 7 951. On dry herbaceous stems of *Apiaceae*, [15], 9.07.1996, leg.-det. Dimitrova, SOMF 22 035, 22 036.

***Cudoniella*** Sacc.

***C. clavus*** (Alb. & Schwein.) Dennis: *Helotium clavus* (Alb. & Schwein.) Gillet - Stoichev & Dimcheva 1988.

On stems of *Rumex alpinus* L., [8], 16.08.1969, Alexandrov, det. Dimitrova, SOMF 8 440. On water-soaked twigs, [8], 3.06.1969, Petrov, det. Chinkova, Alexandrov & Dimitrova, SOMF 8 100. On cupules of *Fagus sylvatica* L., [14], 12.07.1980, Chinkova & Drumeva, det. Chinkova, Drumeva & Baral, SOMF 16 232. On previous year's culms of *Poaceae*, 28.06.1967, Chinkova, det. Baral, SOMF 21 303 (as *Ciboria aschersoniana* (Henn. & Ploettner) Whetzel, Dimitrova 1995).

***C. rubicunda*** (Rehm) Dennis

On cones of *Picea abies* (L.) P. Karst.: [8], 10.10.1995, leg.-det. Dimitrova, SOMF 21 728; [8], 19.10.2001, leg.-det. Dimitrova, SOMF 25 558.

***Discinella*** Boud.

***D. boudieri*** (Quél.) Boud.

On soil, [16], 28.08.1975, Chinkova & Drumeva, det. Dimitrova, SOMF 13 590.

***Durella*** Tul. & C. Tul.

***D. atrocyanea*** (Fr.) Höhn.

On decorticated twig of *Salix* sp., [16], 23.05.1992, Fakirova, det. Dimitrova, SOMF 20 821. On decorticated deciduous twigs, [8], 25.03.1977, Fakirova, det. Dimitrova, SOMF 20 534. On decorticated pine twig, [16], 27.05.1992, leg.-det. Dimitrova, SOMF 20 829.

***Gorgoniceps*** P. Karst.

***G. aridula*** (P. Karst.) P. Karst.

On water-soaked branch of *Picea abies* (L.) P. Karst., [8] - Chinkova 1955.

***Gremmeniella*** M. Morelet

***G. abietina*** (Lagerb.) M. Morelet

On branches of *Pinus nigra* Arn. and *P. sylvestris* L., [5, 17] - Rosnev & Petkov 1986. On pine wood, [5, 10, 13] - Horozov 1988.

***Heterosphaeria*** Grev.

***H. patella*** (Tode) Grev.

On rotten stems of: *Angelica pančičii* Vand., [8], 28.06.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 374; *Cirsium appendiculatum* Griseb., [8], 25.08.1967, Chinkova, det. Dimitrova, SOMF 20 998; *Polygonum alpinum* L., [8], 15.06.2003, Assyov, det. Dimitrova, SOMF 25 607.

***H. patella* f. *veratri-albi*** Rehm

On fallen leaves of *Veratrum album* L., [8], 25.05.1997, Fakirova, det. Dimitrova, SOMF 22 143.



**Heyderia** (Fr.) Link

**H. abietis** (Fr.) Link: *Mitrule abietis* Fr. - Alexandrov 1969; Chinkova & al. 1979; Vanev & Reid 1986; *Mitrule cuculata* (Batsch) Fr. - Chinkova 1955.

On fallen needles of *Picea abies* (L.) P. Karst.: [8], 29.08.1967, Alexandrov, det. Dimitrova, SOMF 8 218; [17], 26.09.1975, Chinkova, Stoichev & Drumeva, det. Dimitrova, SOMF 13 541. On rotten needles of *Abies alba* Mill.: [15], 19.10.1994, leg. Dimitrova, det. Dimitrova & Baral, SOMF 21 502; [15], 22.09.1994, Dimitrova, det. Dimitrova & Baral, SOMF 21 493. On fallen needles of *Picea abies*, [8] - Chinkova 1955.

\***H. pusilla** (Alb. & Schwein.) Link

On rotten needles of *Pinus sylvestris* L., [8], 2.11.1967, Chinkova, det. Baral, SOMF 20 797 (as *H. abietis*, Dimitrova 1995).

**Hymenoscyphus** Gray

**H. calyculus** (Sowerby : Fr.) W. Phillips: *Helotium calyculus* (Sowerby : Fr.) Fr. - Alexandrov 1969; Chinkova & al. 1979.

On dead branches of: *Alnus glutinosa* (L.) Gaertn., [8], 15.11.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 588, 6 589; *A. viridis* (Chaix) DC., [8], 16.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 445; *Carpinus betulus* L., [8], 5.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 400; *Coryllus avellana* L., [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 094; *Fagus sylvatica* L.: [8], 4.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 364; [16], 6.09.1975, Drumeva & Chinkova, det. Drumeva, Chinkova & Dimitrova, SOMF 13 576. On dead deciduous branches: [8], 24.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 870; [8], 8.10.1993, leg.-det. Dimitrova, SOMF 21 156.

**H. caudatus** (P. Karst.) Dennis: *Helotium caudatum* (P. Karst.) Velen. - Alexandrov 1971. On decaying leaves of: *Populus tremula* L., [8], 25.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 886; *Salix* sp., [8], 22.09.1967, Chinkova, det. Dimitrova, SOMF 21 338. On decaying deciduous leaves: [8], 21.10.1967, Alexandrov, det. Dimitrova, SOMF 8 386; [8], 10.10.1995, leg.-det. Dimitrova, SOMF 22 053; [15], 19.10. 1994, leg.-det. Dimitrova, SOMF 21 513.

**H. conscriptus** (P. Karst.) Korf

On fallen twigs and bark of: *Salix caprea* L., [8], 1.11.1967, Alexandrov, det. Dimitrova, SOMF 8 458; *S. lapponum* L., [8], 22.09.1967, Chinkova, det. Dimitrova, SOMF 21 328; *S. purpurea* L., [8], 17.10.2001, leg.-det. Dimitrova, SOMF 25 562. On decorticated twigs of *Salix* sp.: [8], 22.09.1967, Chinkova, det. Dimitrova, SOMF 20 819, 21 329; [8], 8.10.1993, leg.-det. Dimitrova, SOMF 21 317; [8], 16.08.1969, Alexandrov, det. Dimitrova, SOMF 8 444. On hard wood of *Salix* sp., [8], 22.09.1967, Chinkova, det. Baral, SOMF 21 307 (as *Hymenoscyphus subferrugineus* (Nyl.) Dennis, Dimitrova 1995).

**H. epiphyllus** (Pers.) Rehm

On fallen leaves of *Fagus sylvatica* L.: [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 368; [15], 10.10.1991, leg.-det. Dimitrova, SOMF 20 528. On fallen needles of: *Pinus nigra* Arn., [8], 2.11.1967, Alexandrov, det. Alexandrov &

- Dimitrova, SOMF 8 205; *P. sylvestris* L., [8], 20.09.1967, Alexandrov, det. Alexandrov & Baral, SOMF 6 919. On plant debris: [8], 21.10.1967, Chinkova, det. Dimitrova, SOMF 21 158; [16], 8.10.1976, Chinkova & Drumeva, det. Chinkova, Drumeva & Dimitrova, SOMF 13 502; [16], 6.09.1975, Chinkova & Drumeva, det. Dimitrova, SOMF 13 560; [16], 15.07.1975, Chinkova & Drumeva, det. Dimitrova, SOMF 13 587.
- H. fagineus** (Pers.) Dennis: *Helotium fagineum* (Pers. : Fr.) Fr. - Alexandrov 1971.  
On fallen cupules of *Fagus sylvatica* L., [8], 4.09.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 421.
- H. fructigenus** (Bull.) Gray: *Helotium fructigenum* (Bull.) Fuckel - Chinkova 1955; Chinkova & Fakirova 1970; Kuthan & Kotlaba 1981.  
On fallen nuts of *Corylus avellana* L.: [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 999; [8], 31.08.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 346; [8], 19.07.1968, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 392; [8], 10.10.1995, leg.-det. Dimitrova, SOMF 22 051; [15], 8.05.1954, Chinkova, det. Chinkova & Dimitrova, SOMF 4 336; [16], 29.08.1968, Chinkova & Fakirova, det. Chinkova, Fakirova & Dimitrova, SOMF 6 903; [16], 18.09.1969, Chinkova & Alexandrov, det. Chinkova, Alexandrov & Dimitrova, SOMF 8 380; [16], 13.09.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 405. On fallen acorns of *Quercus robur* L., [1] - Kuthan & Kotlaba 1981.
- H. humuli** (Lasch) Dennis  
On dead stem of *Humulus lupulus* L., [15], 19.10.1994, leg.-det. Dimitrova, SOMF 21 491.
- H. imberbis** (Bull.) Dennis  
On rotten branches of: *Corylus avellana* L., [9], 29.07.1996, leg.-det. Dimitrova, SOMF 22 067; *Platanus orientalis* L., [14], 20.11.1967, Chinkova & Drumeva, det. Dimitrova, SOMF 14 383; *Quercus* sp., [8], 10.10.1967, Chinkova, det. Dimitrova, SOMF 22 200. On water-soaked twigs: [8], 10.10.1995, leg.-det. Dimitrova, SOMF 24 962; [14] - Vanev & Reid 1986. On bark of deciduous trees, [8], 3.07.1968, Chinkova, det. Baral, SOMF 21 656 (as *Hymenoscyphus montaniensis* (Ellis & F. W. Anderson) Dennis, Dimitrova 1997a).
- H. cf. imberbis** (Bull.) Dennis  
On cones of *Pinus sylvestris* L., [8], 22.09.1967, Chinkova, det. Baral, SOMF 21 344 (as *Durella suecica* (Starbäck) Nannf., Dimitrova 1995).
- H. immutabilis** (Fuckel) Dennis: *Helotium immutabile* Fuckel - Chinkova & Fakirova 1970.  
On fallen leaves of: *Populus tremula* L.: [8], 21.10.1967, Alexandrov, det. Dimitrova, SOMF 8 401; [8], 24.10.1967, Alexandrov, det. Alexandrov & Baral, SOMF 8 411; *Salix* sp., [8], 8.10.1993, leg.-det. Dimitrova, SOMF 21 339. On fallen deciduous leaves, [8], 10.10.1967, Chinkova, det. Dimitrova, SOMF 21 191. On decaying leaves of *Populus tremula*, [16] - Chinkova & Fakirova 1970.
- Hymenoscyphus kathiae** (Korf) Baral **comb. nov.**  
Basionym: *Pezoloma kathiae* Korf, Mycotaxon 73: 495 (2000).  
On rotten wood of *Corylus* sp., [8], 10.10.1995, Dimitrova, det. Baral, SOMF 22 047 (as *Phaeohelotium subcarneum* (Schumach.) Dennis, Dimitrova, 1998a). On rotten deciduous branch, [8], 3.10.1991, Dimitrova, det. Baral, SOMF 20 761 (as

*Hymenoscyphus vernus* (Boud.) Dennis, Dimitrova, 1996a). On rotten branch of *Pinus* (wood), [15], 10.10.1991, Dimitrova, det. Baral, SOMF 21 211 (as *Hymenoscyphus cyathiformis* (Rehm) O. Kuntze, Dimitrova, 1996b). On rotten branch of *Coniferophytina* (wood), [15], 22.07.1993, Dimitrova, det. Baral, SOMF 21 324.

Note: *Hymenoscyphus kathiae* is very close to *H. imberbis* from which it differs only in the ascospores, containing two large lipid bodies. Both taxa were frequently collected in Central Europe and appear to be distinct at species level. In both a sparse gel on the hyphae at the base of the apothecium with a distinct blue reaction in iodine (IKI or MLZ) was noted in a part of the collections. The presence of gel appears to have been the main reason for placing *H. kathiae* in *Pezoloma* Clem.

***H. lutescens*** (Hedw.) W. Phillips

On cones of: *Larix europaea* Lam. & DC., [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 202; *Pinus sylvestris* L.: [8], 20.09.1964, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 222; [8], 28.07.1966, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 492. On pine cones, [9], 3.06.1993, leg.-det. Dimitrova, SOMF 21 205.

***H. menthae*** (W. Phillips) Baral s. orig. non Baral (in Baral & Krieglsteiner 1985), Hengstmengel (1996)

= *H. consobrinus* (Boud.) Hengstm.

On dead stems of: *Gentiana asclepiadea* L., [8], 16.08.1964, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 436; *Rumex alpinus* L., [8], 16.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 447. On stems and petioles of *Filipendula ulmaria* (L.) Maxim., [8], 3.09.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 419.

Note: According to a study of the type material of *H. menthae*, this taxon was found to be a synonym of *H. consobrinus* (Baral ined.), but not conspecific with the current interpretation of *H. menthae*.

***Hymenoscyphus monticola*** (Berk.) Baral **comb. nov.**

Basionym: *Helotium monticola* Berk. in Grevillea 4: 1 (1875)

*Phaeohelotium monticola* (Berk.) Dennis - Dimitrova 1997a.

On decorticated twigs of *Fagus sylvatica* L., [8], 3.09.1969, Chinkova, det. Dimitrova & Baral, SOMF 21 657.

Note: The distinction between *Hymenoscyphus* (with mainly stalked apothecia and heteropolar spores) and *Phaeohelotium* (with mainly sessile apothecia and homopolar spores) is not possible on the basis of hyaline versus brown ascospores as currently practiced because brown spore walls are not rarely observed in both groups, and this pigmentation consistently occurs only in overmature spores. Thus, fully mature apothecia of *H. monticola* may be completely devoid of brown spores while overmature apothecia of, f. ex., *H. scutula* may contain brown spores. *Phaeohelotium* Kanouse is here considered to be a synonym of *Hymenoscyphus* Gray since a clear cut against species around *P. monticola* can hardly be drawn.

***H. repandus*** (W. Phillips) Dennis

On dry stems of *Vaccinium myrtillus* L., [8], 16.08.1969, Alexandrov, det. Dimitrova, SOMF 8 446. On dead herbaceous stem, [8], 16.08.1969, Alexandrov, det. Dimitrova, SOMF 8 441; On decorticated broad-leaved twigs, [15], 22.07.1993, leg. Dimitrova,

det. Baral, SOMF 21 203.

***H. rhodoleucus*** (Fr.) W. Phillips

On dead stems of *Equisetum* sp., [8], 29.05.1969, Chinkova, det. Alexandrov & Dimitrova, SOMF 7 869.

***H. rokebyensis*** (Svrček) Matheis

On cupules of *Fagus sylvatica* L.: [8], 5.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 366; [8], 31.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 373; [8], 3.10.1991, Dimitrova, det. Baral, SOMF 20 753 (as *Cudoniella acicularis* (Bull. ex Fr.) J. Schröt., Dimitrova 1994b).

***H. salicellus*** (Fr.) Dennis

On branches of *Salix* sp., [8], 21.06.1992, Fakirova, det. Dimitrova, SOMF 21 004.

***H. scutula*** (Pers.) W. Phillips: *Helotium scutula* (Pers.) P. Karst. - Chinkova & Fakirova 1970; Alexandrov 1971.

On dry and dead herbaceous stems of: *Aconitum variegatum* L., [8], 16.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 437; *Artemisia vulgaris* L., [16], 4.09.1970, Chinkova, det. Dimitrova, SOMF 13 615; *Doronicum austriacum* Jacq.: [8], 5.09.1967, Fakirova, det. Dimitrova, SOMF 21 337; [8], 16.08.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 439; *Lysimachia vulgaris* L.: [8], 31.08.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 350; [8], 25.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 349; *Mentha longifolia* (L.) Huds.: [8], 5.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 337; [8], 16.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 336; *Juncus* sp., [8], 28.06.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 087, 8 341; *Ranunculus repens* L., [15], 8.09.2002, leg.-det. Dimitrova, SOMF 25 351; *Rumex alpinus* L., [8], 16.08.1969, Alexandrov, det. Dimitrova, SOMF 8 440; *Sambucus ebulus* L., [8], 16.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 867; *Succisa pratensis* Moench, [8], 3.09.1969, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 416; *Urtica dioica* L., [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 085. On dry herbaceous stems: [8], 8.10.1993, leg.-det. Dimitrova, SOMF 21 188; [8], 28.05.1967, Fakirova, det. Dimitrova, SOMF 21 161; [8], 31.08.1967, Chinkova, det. Dimitrova, SOMF 21 184, 21 185; [8], 22.09.1967, Chinkova, det. Dimitrova, SOMF 21 322; [8], 10.10.1967, Chinkova, det. Dimitrova, SOMF 20 783; [15], 19.10.1994, leg.-det. Dimitrova, SOMF 21 503, 21 505, 22 064. On dry stem of *Filipendula ulmaria* (L.) Maxim., [5] - Vanev & Reid 1986.

***Hymenoscyphus* aff. *scutula***

On previous year's stem of *Senecio pančičii* Deg., [8], 22.09.1967, Chinkova, det. Dimitrova & Baral, SOMF 21 100 (as *H. scutula* var. *fucatus* W. Phillips, Dimitrova 1996b).

***H. serotinus*** (Pers.) W. Phillips: *Helotium serotinum* (Pers.) Fr. - Chinkova 1965; Alexandrov 1969, 1971.

On branches of *Fagus sylvatica* L.: [8], 21.10.1967, Chinkova, det. Dimitrova, SOMF 21 634; [15], 14.11.1991, Gyosheva, det. Dimitrova, SOMF 20 803; [16], 8.10.1976, Chinkova & Drumeva, det. Chinkova, Drumeva & Dimitrova, SOMF 13 490; [17], 28.09.1979, Chinkova & al., det. Dimitrova, SOMF 16 233. On rotten deciduous branches: [8], 18.11.1990, leg.-det. Dimitrova, SOMF 20 798; [8], 10.10.1995, leg.-det.

Dimitrova, SOMF 22 052; [8], 3.11.1966, Chinkova, det. Dimitrova, SOMF 21 154; [15], 10.10.1991, leg.-det. Dimitrova, SOMF 20 799; [15], 19.10.1994, leg.-det. Dimitrova, SOMF 21 506; [16] - Chinkova 1965.

**H. suspectus** (Nyl.) Hengstm.: *Helotium scutula* var. *suspecta* (Nyl.) P. Karst. - Alexandrov 1971.

On rotten stems of *Calamagrostis arundinacea* (L.) Roth, [8], 20.09.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 7 083. On dry herbaceous stems, [15], 22.09.1994, leg.-det. Dimitrova, SOMF 21 604.

**H. virgultorum** (Vahl) W. Phillips: *Helotium virgultorum* (Wigg.) Fr. - Chinkova 1955.

On dead branches of *Fagus sylvatica* L.: [8], 4.10.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 8 364; [16], 6.09.1975, Chinkova & Drumeva, det. Dimitrova, SOMF 13 576. On fallen cupules of *Fagus sylvatica* L., [8], 10.10.1995, Dimitrova, det. Baral, SOMF 22 199. On rotten wood of *Picea abies* (L.) P. Karst., [8], 22.09.1967, Chinkova, det. Dimitrova, SOMF 21 327. On rotten deciduous branches, [8] - Chinkova 1955.

**H. vitigenus** (De Not.) Dennis

On dry herbaceous stem, [8], 8.10.1997, leg.-det. Dimitrova, SOMF 22 144.

**Ombrophila** Fr.

**O. janthina** (P. Karst.) Rehm

On fallen cones of *Picea abies* (L.) P. Karst., [8] - Chinkova 1955.

**O. pura** (Pers. : Fr.) Fr.: *Neobulgaria pura* (Fr.) Petrak - Rosnev & Stoichev 1985; Fakirova & al. 2000.

On dead *Fagus* wood, [15] - Rosnev & Stoichev 1985. On fallen trunk, [5] - Fakirova & al. 2000.

**Ombrophila** sp.

On decaying leaves of *Sorbus aria* (L.) Crantz, [8], 4.10.1967, Alexandrov, det. Baral, SOMF 6 481.

**Patinellaria** P. Karst.

**P. sanguinea** (Pers.) P. Karst.

On dead wood of *Abies alba* Mill., [8], 25.05.1969, Chinkova, det. Dimitrova, SOMF 20 535.

**Tympanis** Tode

**T. alnea** (Pers.) Fr.

On dead branches of *Alnus glutinosa* (L.) Gaertn., [5] - Nannizzi 1938.

**T. pinastri** (Pers.) Tul.

On bark of *Pinus sylvestris* L., [8], 4.05.1967, Alexandrov, det. Alexandrov & Dimitrova, SOMF 6 933.

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## References

- Alexandrov, B. 1968: Studies on the discomycetous flora of Vitosha Mountain. I. — *Izv. Bot. Inst. (Sofia)* **17**: 157-166.
- 1969: Materials on the discomycetous flora of Plana Mountain. — *Izv. Bot. Inst. (Sofia)* **19**: 211-216.
- 1970: The soil discomycetes in Vitosha Mountain (Preliminary communication). — *Izv. Bot. Inst. (Sofia)* **20**: 195-203.
- 1971: Investigations on the discomycetous flora in Vitosha Mountain. II. — *Izv. Bot. Inst. (Sofia)* **21**: 231-235.
- Baral, H. O. & Krieglsteiner, G. J. 1985: Inoperculate *Discomyzeten* mit taxonomischen, ökologischen und chorologischen Hinweisen. — *Beih. Z. Mykol.* **6**: 1-226.
- Barsakov, B. 1928: Beitrag zur Erforschung der Pilzflora Bulgariens. — *Ann. Sofia Univ. "St. Kliment Ohridski"* **24(2-3)**: 1-18.
- 1933: Charakteristik der Pilzflora des Witosha-Gebirges. — *Ann. Sofia Univ. "St. Kliment Ohridski"* **29(3)**: 49-91.
- Cannon, P. F., Hawksworth, D. L. & Sherwood-Pike, M. A. 1985: The British *Ascomycotina* an Annotated checklist. — *Commonwealth Mycol. Inst.*
- Carpenter, S. E. 1981: Monograph of *Crocicreas (Ascomycetes, Helotiales, Leotiaceae)*. — *Mem. N. J. Bot. Gard.* **33**: 1-290.
- Chinkova, C. 1954: Die höheren Pilze des Witoscha-Gebirges. — Sofia.
- 1955: Beitrag zur Flora der Pilze auf dem Witoscha-Gebirge. — *Izv. Bot. Inst. (Sofia)* **4**: 323-351.
- 1958: Floristisches Material über die Pilzflora im östlichen Teil des Rila-Gebirges. — *Izv. Bot. Inst. (Sofia)* **6**: 411-430.
- 1961: Materials on the fungous flora of Bulgaria. — *Izv. Bot. Inst. (Sofia)* **8**: 251-259.
- 1962: Distribution of higher fungi in certain forests of the Loudogorie. — *Izv. Bot. Inst. (Sofia)* **9**: 91-99.
- 1965: Materials on the fungous flora of Bulgaria. — *Ann. Sofia Univ. "St. Kliment Ohridski", Biol. Fac.* **58(2)**: 95-105.
- & Alexandrov, B. 1971: On the fungal flora of the Lozenska Mountain. II. — *Izv. Bot. Inst. (Sofia)* **21**: 225-229.
- & Fakirova, V. 1970: Materials on the fungous flora of the Lozenska Mountain. — *Izv. Bot. Inst. (Sofia)* **20**: 165-183.
- , Stoichev, G., Drumeva, M. & Calakov, V. 1979: Materials on macromycete distribution in the Rhodope Mountains. I — *Phytology* **12**: 70-80.
- Dennis, R. W. G. 1956: A revision of the British *Helotiaceae* in the herbarium of the Royal Botanic Gardens, Kew, with notes on related European species. — *Mycol. Pap.* **62**: 1-216.
- 1964: Remarks on the genus *Hymenoscyphus* S. F. Gray, with observations on sundry species referred by Saccardo and others to the genera *Helotium*, *Pezizella* or *Phialea*. — *Persoonia* **3**: 29-80.
- 1971: New or interesting British Microfungi. — *Kew Bull.* **25(2)**: 335-374.
- 1978: British *Ascomycetes*, 2nd edn. — J. Kramer, Vaduz.
- Dimitrova, E. 1994a: A contribution to the study of the discomycetous fungi in Bulgaria. I. — *Fitologija* **47**: 69-73.
- 1994b: A contribution to the study of the discomycetous fungi in Bulgaria. II. — *Fitologija* **47**: 74-77.
- 1995: New to Bulgaria discomycetous fungi, found in the Vitosha Mountain. — *Phytol. Balcan.* **2**: 97-99.

- 1996a: A contribution to the study of the discomycetous fungi in Bulgaria. III. — *Fitologija* **48**: 76-80.
- 1996b: New records of Bulgarian *Discomycetes*. — *Phytol. Balcan.* **2/1**: 91-94.
- 1997a: New data about discomycetous fungi in Bulgaria. — *Phytol. Balcan.* **3/1**: 121-125.
- 1997b: *Discomycetes* new to Bulgaria. - *Bocconea* **5(2)**: 845-848.
- 1997c: Revision notes on the discomycetous fungi from *Helotiales* in Bulgaria. — *Phytol. Balcan.* **3/2-3**: 211-215.
- 1998a: New taxa of discomycetous fungi to Bulgaria. — *Phytol. Balcan.* **4/1-2**: 213-217.
- 1998b: Genus *Crocicreas* in Bulgaria. — *Phytol. Balcan.* **4/3**: 113-139.
- 2000: Results of the revision of herbarium specimens belonging to discomycetes fungi, deposited in SOM at the Institute of Botany. — *Ann. Sofia Univ. "St. Kliment Ohridski"* **91(2)**: 105-109.
- Fakirova, V. & Dimitrova, E. 1999: Discomycetous fungi from the Central Balkan Range and Mt Vitosha. — *Phytol. Balcan.* **5/1**: 115-119.
- , Denchev, Ts. & Gyosheva, M. 2000: Biodiversity of macromycetes in Central Balkan National Park. — In: Sakalian (Ed.) *Biological Diversity of the Central Balkan National Park*. Pensoft: 131-156.
- Hengstmengel, J. 1996: Notes on *Hymenoscyphus* II. On three non-fructicolous species of the 'fructigenus-group' with croziers. — *Persoonia* **16 (2)**: 191-207.
- Horozov, S. 1988: Protection of the forest trees against pests, diseases and damage during 1987 and expecting damage during 1988. - *Gorsko Stopanstvo* **44(3)**: 33-36.
- Kirk, P. M., Cannon, P. F., David, J. C. & Stalpers J. A.. 2001. *Ainsworth & Bisby's Dictionary of the Fungi*. 9th edn. — CAB International, Wallingford, UK.
- Klika, I. 1926: Ein Beitrag zur Ascomyceten Flora von Bulgarian. — *Ann. Mycol.* **24(1-2)**: 133-136.
- Kuthan, J. & Kotlaba, Fr. 1981: Makromyzeten des Nationalparkes Ropotamo in Bulgarien. — *Sborn. Nár. Mus. v Praze, O/ada B, Po/ír. Vedy* **37(2)**: 77-136.
- & — 1988: Makromyzeten der bulgarischen Schwarzmeerküste und einiger Orte im Landesinnern Bulgariens. — *Sborn. Nár. Mus. v Praze, O/ada B, Po/ír. Vedy* **44(3-4)**: 137-243.
- Ližon, P. 1992: The genus *Hymenoscyphus* (*Helotiales*) in Slovakia, Czechoslovakia. — *Mycotaxon* **45**: 1-59.
- Nannizzi, A. 1938: Contributo alla flora micologica della Bulgaria: Macromiceti del circondario di Kazanlik (Balcani centrali). — *Atti Accad. Sci. Siena, Sez. Agron* **5(1)**: 33-41.
- Rosnev, B. 1988: Abiotic and biotic injuries on certain tree species on the slopes of the Sofia Balkan mountain in proximity to Kremikovski metallurgical works. — *Nauka za Gorata* **1988(1)**: 56-62.
- & Stoichev, G. 1985: Decay fungi the "Parangalitsa" reserve. — *Gorskostop. Nauka* **22(5)**: 45-50.
- & Petkov, P. 1986: Patologični principi za vložavane na zdravoslovnoto sostojanie na njakoi iglolistni kulturi v Bulgaria. — *Gorskostop. Nauka* **23(3)**: 74-81.
- Stoichev, G. & Dimcheva, M. 1982: New taxa and chorological data for the fungus flora of Bulgaria. — *Phytology* **20**: 68-73.
- & — 1984: New chorological data concerning fungal flora in Bulgaria. — *Fitologija* **24**: 68-72.
- & — 1988: Mushrooms new for the Pirin Mountain and Bulgaria. — "Vasil Kolarov" - Higher Institute of Agriculture-Plovdiv, *Scientific works* **33(4)**: 89-93.
- Vanev, S. & Reid, D. 1986: New taxa and chorologic data for the Bulgarian fungus flora. — *Fitologija* **31**: 63-70.
- Verkley, G. J. 1999: A monograph of the genus *Pezicula* and its anamorphs. — *Stud. Mycol.* **44**: 1-180.

Zlatanov, S. 1977: Über die Trocknung der Kiefer *Pinus radiata*. — Gorsko Stopanstvo **33(6)**: 20-24.

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