

The lichenicolous fungi of Russia: geographical overview and a first checklist

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Abstract. A first checklist of the lichenicolous fungi of Russia is presented, based on all pertinent publications (134 sources) and some unpublished herbarium specimens. The list enumerates 276 species in 97 genera from 285 lichen host species in 102 genera. The knowledge of lichenicolous fungi in various regions of Russia is outlined.

Key words: *Ascomycota*, *Basidiomycota*, bibliography, fungal diversity, lichen parasites

Introduction

Typical lichenicolous fungi are non-lichenized fungi obligately growing on lichens. They are usually studied by lichenologists and often included in lichen floras. During the last decade a number of checklists of lichenicolous fungi were published in countries neighboring with Russia by Kondratyuk *et al.* (1998), Motiejunaite (1999), Suija (2005a, b) and, particularly important, by Santesson *et al.* (2004), which encouraged us to make this first summing-up of the knowledge of the lichenicolous fungi in Russia as well.

There were mostly Finnish lichenologists, who began investigations of lichenicolous fungi in Russia in the mid of the 19th century. Studies of this 'Finnish' period embraced the European North-West of the country and continued till the mid of the 20th century (Nylander 1866a, b; Norrlin 1876; Vainio 1878, 1883; Brenner 1885; Räsänen 1939; etc.). Some of these reports were recently revised by Hawksworth & Aienza (1994) or Zhurbenko & Ahti (2005). At the same period of time some data were obtained too during investigations of the Arctic lichen floras (Nylander 1887; Vainio 1909; Keissler 1928). The first and until recently the only Russian student of lichenicolous fungi was the famous lichenologist and algologist A.A. Elenkin who considered them as facultative lichens and described several new taxa of these fungi from Mongolia,

Tyan'-Shan', Tibet and Caucasus, in partial co-authorship with the mycologists A.A. Jaczewskii and N.N. Woronichin (Elenkin 1901; Elenkin & Woronichin 1908). Between 1950 and 1980 nobody dealt with the lichenicolous fungi in Russia. Their studies resumed in the mid 1990^{ies}, focusing at first on the Arctic and mountainous regions of Russia (Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko & Otnyukova 2001; Zhurbenko, 2001, 2002b; etc.). At present work on Russian lichenicolous fungi is progressing on a wider scope both nationally (Blinkova & Urbanavichus 2005; Merkulova & Urbanavichus 2006) and internationally (Otte 2004, 2005; Alstrup *et al.* 2005; Alstrup & Ahti 2007).

Along with lichenological floristic papers and handbooks, some information on the Russian lichenicolous fungi is scattered in worldwide or regional systematic treatments of particular groups of fungi (e.g. Titov 1983, 1990; Triebel 1989; Hawksworth & Santesson 1990; Titov & Tibell 1993; Diederich & Etayo 1994; Rossman *et al.* 1999; Hoffmann & Hafellner 2000) or of fungi growing on particular lichen host taxa (Kümmerling *et al.* 1993; Hansen & Alstrup 1995; Matzer 1996; Ihlen 1998; Zhurbenko & Alstrup 2004; Calatayud *et al.* 2004; Zhurbenko & Triebel 2005; etc.).

The results presented are based on 134 publications and some unpublished specimens of lichenicolous fungi, mainly from the herbaria of Helsinki University (H) and Komarov Botanical Institute in St.-Petersburg (LE). Altogether these

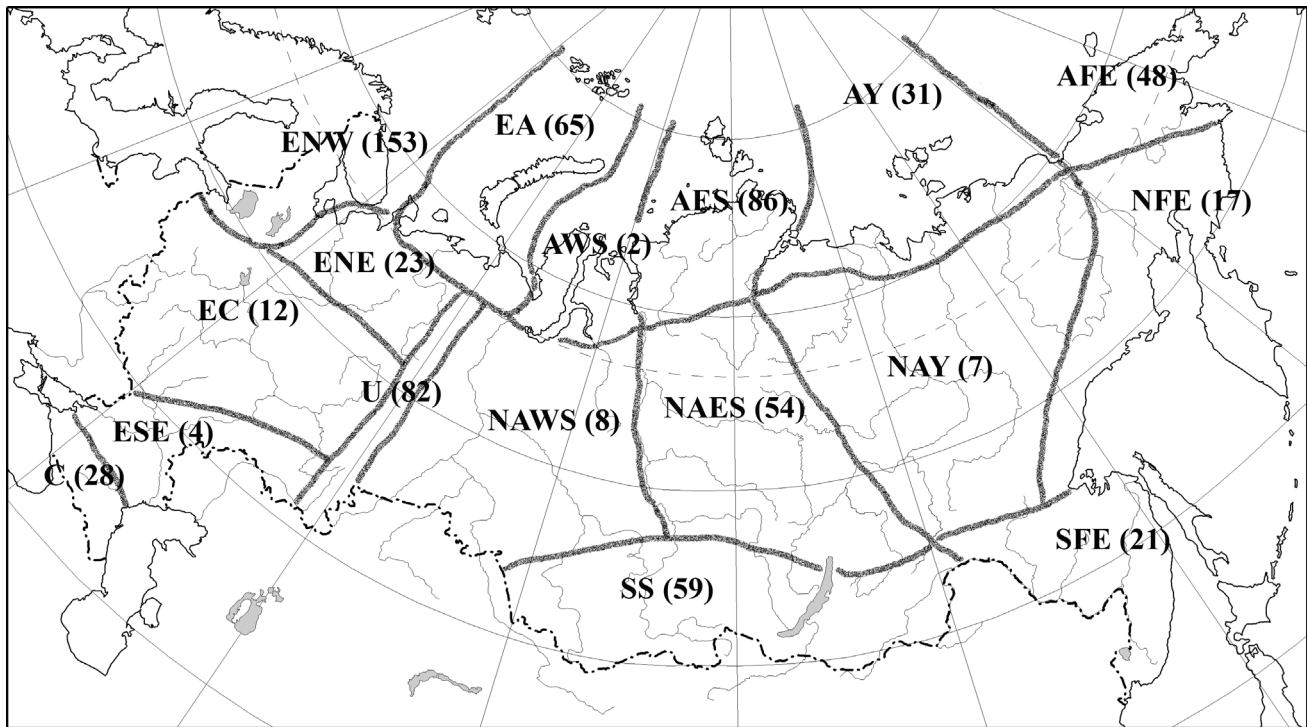


Fig. 1. Knowledge of lichenicolous fungi in various regions of Russia. Abbreviations: EA – European Arctic, ENW – European North-West, ENE – European North-East, EC – European Center, C – Caucasus, ESE – European South-East, U – Ural, AWS – Arctic Western Siberia, NAWs – non-Arctic Western Siberia, AES – Arctic Eastern Siberia, NAES – non-Arctic Eastern Siberia, SS – Southern Siberia, AY – Arctic Yakutia, NAY – non-Arctic Yakutia, AFE – Arctic Far East, NFE – Northern Far East, SFE – Southern Far East. Known number of lichenicolous fungi species in a region is given in brackets.

document 276 species (with 1 additional variety) in 97 genera of fungi, which grow on 285 lichen host species in 102 genera. Uncertain reports that we couldn't verify by voucher specimens are not considered here. Scarcely lichenized species of *Tetramelas* and not strictly lichenicolous *Athelia arachnoidea* (Berk.) Jülich and *Chaenothecopsis* species are also included. The lichenicolous fungi of Russia are still very fragmentary explored. Areas that are quite well studied include the European North-West, the Arctic and some mountain systems of the Urals and Siberia. As is indicated below in a geographical overview, the rest of Russia almost remains 'terra incognita' for lichenicolous fungi.

Knowledge of lichenicolous fungi in various regions of Russia

European Arctic

- Franz Josef Land – 40 spp. (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Diederich *et al.* 2002; Zhurbenko 2002c; Zhurbenko & Alstrup 2004).
- Nenets Autonomous Okrug – 5 spp. (Pystina 1996; Karatygin *et al.* 1999; Diederich & Zhurbenko 2001; Zhurbenko & Alstrup 2004).
- Novaya Zemlya – 9 spp. (Keissler 1928; Kümmerling *et al.* 1993; Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Alstrup 2004).
- Polar Ural – 31 spp. (Ryabkova 1998; Karatygin *et al.* 1999; Zhurbenko 2002b, c, 2007a).

European North-West

- Karelia – 123 spp. (Nylander 1865, 1866a, b, 1875; Norrlin 1876, 1878; Vainio 1881, 1883, 1921, 1922, 1927, 1934, 1940; Räsänen 1939; Laurila 1940; Auer 1943; Triebel 1989; Hawksworth & Santesson 1990; Rambold *et al.* 1990; Halonen 1993; Rambold 1993; Diederich & Christiansen 1994; Hawksworth & Atienza 1994; Miadlikowska & Alstrup 1995; Fadeeva *et al.* 1997; Triebel *et al.* 1997; Diederich & Etayo 2000; Himelbrant *et al.* 2001; Diederich *et al.* 2002; Zhurbenko 2002c; Zhurbenko & Himelbrant 2002; Ertz *et al.* 2003; Alstrup 2004; Titov 2004; Urbanavichus & Urbanavichene 2004; Zhurbenko & Alstrup 2004; Alstrup *et al.* 2005; Ertz *et al.* 2005; Zhurbenko & Ahti 2005; Alstrup & Ahti 2007; herb. H).
- Leningrad Region – 29 spp. (Vainio 1878, 1921, 1922, 1927, 1934; Brenner 1885; Räsänen 1939; Henssen 1963; Roms 1975; Titov 1983, 1984, 2004; Golubkova *et al.* 1995; Tibell 1999; Himelbrant 2002, 2005; Kuznetsova & Himelbrant 2002; Titov 2004; Alstrup & Ahti 2007; herb. H).
- Murmansk Region – 62 spp. (Nylander 1866b; Vainio 1883; Hertel 1969; Mayrhofer 1987; Triebel 1989; Hawksworth & Santesson 1990; Halonen 1993; Karatygin

et al. 1999; Diederich & Zhurbenko 2001; Zhurbenko 2001, 2002c; Diederich *et al.* 2002; Titov 2004; Zhdanov 2004; Zhurbenko & Alstrup 2004; Urbanavichus & Urbanavichene 2004, 2005b; Urbanavichene 2005; Urbanavichene & Urbanavichus 2005; Urbanavichus *et al.* 2007; Alstrup & Ahti 2007; herb. H, LE).

- Pskov Region – 2 spp. (Titov 2004; Alstrup & Ahti 2007).

European North-East

- Arkhangel'sk Region – 2 spp. (Hawksworth & Miadlikowska 1997; Urbanavichus & Urbanavichene 2004).
- Komi Republic – 22 spp. (V. Alstrup, J.-O. Hermansson, pers. comm.).

European Center

- Central Russian Upland – 2 spp. (Rossman *et al.* 1999; Titov 2004).
- middle portion of Volga basin – 8 spp. (Urbanavichus & Urbanavichene 2005a).
- Nizhnii Novgorod Region – 2 spp. (Presnyakova 2001).
- Valdai – 1 sp. (Rossman *et al.* 1999).

Caucasus – 28 spp. (Elenkin & Woronichin 1908; Vězda 1980; Triebel & Rambold 1988; Hafellner 1996; Matzer 1996; Navarro-Rosinés & Hafellner 1996; Hoffmann & Hafellner 2000; Hertel 2001; Bredkina *et al.* 2003; Otte 2004, 2005; Titov 2004; Urbanavichus & Urbanavichene 2004; Blinkova & Urbanavichus 2005; Sérusiaux & Diederich 2005).

European South-East, lower portion of Volga basin – 4 spp. (Calatayud *et al.* 2004; herb. H, LE).

Ural

- Northern Ural – 81 spp. (Hermansson 1997; Zhurbenko 2002c, 2004; Ertz *et al.* 2003; Zhurbenko & Alstrup 2004; Ertz *et al.* 2005; Hermansson *et al.* 2006; herb. LE).
- Middle Ural – 1 sp. (Roms 1975).
- Southern Ural – 4 spp. (Calatayud *et al.* 2004; Zhurbenko & Alstrup 2004; Merkulova & Urbanavichus 2006).

Arctic Western Siberia, Gydan Peninsula – 2 spp. (Andreev 1994; Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Diederich & Etayo 2000).

non-Arctic Western Siberia

- Omsk Region – 1 sp. (Roms 1975).
- Western Siberian Lowland – 7 spp. (Vainio 1928; Roms 1975; Neshataev *et al.* 2002; Urbanavichus & Urbanavichene 2004).

Arctic Eastern Siberia

- Izvestii TsIK Islands – 4 spp. (Zhurbenko & Santesson 1996; Diederich & Zhurbenko 1997; Karatygin *et al.* 1999; Diederich *et al.* 2002).

- Nordenskjöld Islands – 1 sp. (Zhurbenko & Alstrup 2004).
- Severnaya Zemlya – 24 spp. (Zhurbenko & Santesson 1996; Diederich & Zhurbenko 1997, 2001; Karatygin *et al.* 1999; Diederich & Etayo 2000; Diederich *et al.* 2002; Zhurbenko 2002c; Zhurbenko & Triebel 2003, 2005; Alstrup 2004; Zhurbenko & Alstrup 2004; Zhurbenko & Matveeva 2006; herb. LE).
- Taimyr Peninsula – 77 spp. (Hawksworth & Dyko 1979; Triebel 1989, 2006; Zhurbenko & Santesson 1996; Ihlen 1998; Santesson 1998; Zhurbenko 1998, 2002c, 2007b; Karatygin *et al.* 1999; Diederich & Etayo 2000; Zhurbenko & Pospelova 2001; Diederich *et al.* 2002; Alstrup 2004; Zhurbenko & Alstrup 2004; Ertz *et al.* 2005; Zhurbenko & Triebel 2005; herb. LE).
- Vize Island – 3 spp. (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko 2002c).

non-Arctic Eastern Siberia

- middle portion of Yenisey River – 3 spp. (Hawksworth 1981; Diederich & Zhurbenko 2001; Titov 2004).
- Putorana Plateau – 55 spp. (Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Hoffmann & Hafellner 2000; Zhurbenko 2000, 2002; Titov 2004; Zhurbenko & Alstrup 2004; Zhurbenko & Triebel 2005; herb. LE).

Southern Siberia

- Altai – 33 spp. (Sedel'nikova 1990, 2001a; Zhurbenko & Davydov 2000; Calatayud *et al.* 2004; Heuchert & Braun 2006; herb. LE).
- Baikal Lake Region – 18 spp. (Urbanavichene 1998; Tretiach & Nimis 1999; Diederich & Etayo 2000; Titov 2004; Urbanavichus & Urbanavichene 2004; herb. LE).
- Kuznetskoe Upland – 2 spp. (Sedel'nikova 1990).
- Sayan Mountains – 17 spp. (Titov 1990, 2004; Sedel'nikova 2001b; Voronjuk & Makryi 2002; Zhurbenko & Alstrup 2004).
- Tuva – 16 spp. (Zhurbenko & Otnyukova 2001; Alstrup & Ahti 2007).

Arctic Yakutia

- lower course of Kolyma River – 10 spp. (Zhurbenko *et al.* 2005).
- lower course of Lena River – 15 spp. (Karatygin *et al.* 1999; Diederich & Zhurbenko 2001; Zhurbenko 2002a, c; Zhurbenko *et al.* 2002; Triebel 2003; Zhurbenko & Alstrup 2004).
- New Siberian Islands – 10 spp. (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Nordin 2000; Zhurbenko 2002c).

non-Arctic Yakutia

- middle portion of Indigirka River – 5 spp. (Diederich & Etayo 2000; herb. LE).
- middle portion of Lena River – 2 spp. (Alstrup & Ahti 2007).

Arctic Far East

- Chukotka – 45 spp. (Nylander 1887; Vainio 1909; Triebel 1989; Kümmerling *et al.* 1993; Hansen & Alstrup 1995; Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Diederich & Etayo 2000; Diederich *et al.* 2002; Zhurbenko 2002c, 2007b; Hertel & Andreev 2003; Zhurbenko & Triebel 2003, 2005; Zhurbenko & Alstrup 2004; herb. LE).
- Wrangel Island – 10 spp. (Karatygin *et al.* 1999; Zhurbenko 2002c; Zhurbenko & Alstrup 2004; Kholod & Zhurbenko 2005; Zhurbenko & Triebel 2005).

Northern Far East

- Kamchatka Peninsula – 15 spp. (Hoffmann & Hafellner 2000; Titov 2004; Titov *et al.* 2004; Neshataeva *et al.* 2006; herb. LE).
- Khabarovsk Territory – 10 spp. (Titov & Tibell 1993; Titov 2004; Alstrup & Ahti 2007; herb. H).

Southern Far East

- Amur Region – 2 spp. (Chabanenko 2002).
- Kuril Islands – 7 spp. (Bredkina *et al.* 1992; Titov & Tibell 1993; Titov 2004).
- Primorye Territory – 13 spp. (Titov & Tibell 1993; Diederich & Etayo 1994; Santesson 1994, 1998; Aptroot *et al.* 1997; Chabanenko 2002; Titov 2004; Ertz *et al.* 2005).
- Sakhalin Island – 5 spp. (Titov 2004; herb. LE).

Regions without precise localities

- 'Ural' – 2 spp. (Triebel *et al.* 1997; Ertz *et al.* 2005).
- 'Asian Arctic' – 1 sp. (Roms 1975).
- 'Krasnoyarsk Territory' – 1 sp. (Alstrup 2004).
- 'Siberia' – 2 spp. (Kalb *et al.* 1995; Molitor & Diederich 1997; van den Boom *et al.* 1998).

Annotated species list

The annotations include selected synonyms, Russian host lichens, occasionally the other substrates, the occurrence in geographical regions of Russia arranged from north to south and from west to east, incidental notes, approximate number of reports [in square brackets] and sources of information. Authors of host lichens are cited at first mention. An asterisk (*) denotes species described from Russia.

Abrothallus bertianus De Not. – on *Melanelixia fuliginosa* (Duby) O. Blanco *et al.*, *Melanohalea olivacea* (L.) O. Blanco *et al.*, *M. septentrionalis* (Lynge) O. Blanco *et al.*; Karelia, Pskov Region, Caucasus; [4] (Räsänen 1939; Blinkova & Urbanavichus 2005; Otte 2005; Alstrup & Ahti 2007)

A. caeruleascens Kotte – on *Xanthoparmelia conspersa* (Ach.) Hale, *X. stenophylla* (Ach.) Ahti & D. Hawksw.; Karelia, Tuva; [4] (Räsänen 1939; Zhurbenko & Otnyukova 2001; Zhurbenko & Ahti 2005)

A. cetrariae Kotte – on *Platismatia glauca* (L.) W.L. Culb. & C.F. Culb.; Karelia, Leningrad Region, Northern Ural; [7] (Vainio 1883; Zhurbenko 2004; Zhurbenko & Ahti 2005; Alstrup & Ahti 2007)

A. parmeliarum (Sommerf.) Arnold, syn. *Lecidea parmeliarum* Sommerf. – on *Parmelia fraudans* (Nyl.) Nyl., *P. omphalodes* (L.) Ach., *P. saxatilis* (L.) Ach., *P. sulcata* Taylor; Karelia, Leningrad Region, Polar and Northern Urals, Western Siberian Lowland, Putorana Plateau, Altai, Tuva, Sayan Mountains, middle portion of Lena River; [21] (Norrin 1876; Vainio 1878, 1883; Brenner 1885; Zhurbenko & Hafellner 1999; Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001; Neshataev *et al.* 2002; Zhurbenko 2002b, 2004; Zhurbenko & Himelbrant 2002; Zhurbenko & Ahti 2005; Alstrup & Ahti 2007)

A. peyritschii (Stein) Kotte – on *Vulpicida pinastri* (Scop.) J.-E. Mattsson & M.J. Lai; Leningrad Region (1875, F. Elfving, H; 1799, Chr. Steven, H), Khabarovsk Territory (1980?, P. Alanko 318 210, H); [3]

A. prodiens (Harm.) Diederich & Hafellner – on *Hypogymnia physodes* (L.) Nyl.; Murmansk Region, Karelia, Western Siberian Lowland; [3] (Vainio 1928; Urbanavichene & Urbanavichus 2005; Zhurbenko & Ahti 2005)

A. sueticus (Kirschst.) Nordin – on *Ramalina sinensis* Jatta; Karelia; [4] (Zhurbenko & Ahti 2005)

Acanthonitschkea peltigericola (Alstrup & Olech) O.E. Erikss. & R. Sant., syn. *Hystrix peltigericola* Alstrup & Olech – on *Peltigera scabrosa* Th. Fr.; Franz Josef Land; [1] (Zhurbenko & Santesson 1996)

Arthonia almquistii Vain. – on *Koerberiella wimmeriana* (Körb.) Stein; Karelia; [1] (Rambold *et al.* 1990)

A. clemens (Tul.) Th. Fr. – on *Protopannaria pezizoides* (Weber) P.M. Jørg. & S. Ekman, *Psoroma hypnorum* (Vahl) Gray, *Rhizoplaca chrysoleuca* (Sm.) Zopf; Franz Josef Land, Taimyr Peninsula; [5] (Zhurbenko & Santesson 1996)

A. epiphyscia Nyl., syn. *Arthonia physciae* Vain., *Conida destruens* Rehm – on *Physcia caesia* (Hoffm.) Fűrnr., *P. dubia* (Hoffm.) Lettau, *P. stellaris* (L.) Nyl.; Karelia, Franz Josef Land, Polar and Southern Urals, Taimyr Peninsula, Chukotka; [7] (Vainio 1909; Räsänen 1939; Zhurbenko & Santesson 1996; Zhurbenko 2002b; Merkulova & Urbanavichus 2006)

A. excentrica Th. Fr. – on *Lepraria* spp.; Franz Josef Land, Northern Ural, Severnaya Zemlya, Taimyr Peninsula; [9] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko 2004)

A. fuscopurpurea (Tul.) R. Sant., syn. *Arthonia nephromiaria* Nyl. – on *Nephroma resupinatum* (L.) Ach., *Solorina* sp.; Karelia, Putorana Plateau; [3] (Nylander 1866b; Norrin 1876; Zhurbenko & Hafellner 1999)

A. galactinaria Leight. – on *Lecanora crenulata* Hook.; middle portion of Volga basin; [1] (Urbanavichus & Urbanavichene 2005a)

- A. bertelii* (Calat., Barreno & V.J. Rico) Hafellner & V. John, syn. *Arthonia aspiciliae* Alstrup & E.S. Hansen ssp. *bertelii* Calat., Barreno & V.J. Rico – on *Aspicilia fruticulosa* (Eversm.) Flagey, *A. vagans* Oxner s. lat.; lower portion of Volga basin, Southern Ural, Altai; [4] (Calatayud *et al.* 2004)
- A. intexta* Almq., syn. *Diplophragmia petsamoënsis* Vain. var. *savonica* Räsänen – on *Lecanora argopholis* (Ach.) Ach., *Lecidella stigmatea* (Ach.) Hertel & Leuckert; Murmansk Region, Karelia; [2] (Räsänen 1939; Hertel 1969)
- A. microsticta* Vain. – on leaves of *Buxus*, host lichen not indicated, possibly *Fellbanera bouteillei* (Desm.) Vězda (Matzer 1996); Caucasus; [1] (Vězda 1980)
- A. molendoi* (Frauenf.) R. Sant. – on *Xanthoria elegans* (Link) Th. Fr.; Putorana Plateau; [2] (Zhurbenko & Hafellner 1999)
- A. obscurior* Triebel – on *Pilophorus dovrensis* (Nyl.) Timdal, Hertel & Rambold; Chukotka; [1] (Zhurbenko & Triebel 2005)
- A. peltigerea* Th. Fr. – on *Solorina saccata* (L.) Ach.; Franz Josef Land, Taimyr Peninsula; [5] (Zhurbenko & Santesson 1996)
- A. peltigerina* (Almq.) H. Olivier – on *Peltigera aphthosa* (L.) Willd., *P. canina* (L.) Willd., *P. malacea* (Ach.) Funck, *P. rufescens* (Weiss) Humb., *Solorina crocea* (L.) Ach.; Taimyr Peninsula, Altai, lower reach of Lena River, Chukotka; [10] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Davydov 2000; Triebel 2006)
- A. stereocaulina* (Ohlert) R. Sant. – on *Stereocaulon alpinum* Funck, *S. botryosum* Ach., *S. depressum* (Frey) I.M. Lamb, *S. glareosum* (Savicz) H. Magn., *S. groenlandicum* (Dahl) I.M. Lamb, *S. rivulorum* H. Magn., *S. subcoralloides* (Nyl.) Nyl., *S. vesuvianum* Pers.; Murmansk Region, Franz Josef Land, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau, Chukotka; [21] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2001)
- A. subfuscicola* (Linds.) Triebel – on *Lecanora carpinea* (L.) Vain.; Karelia; [1] (Fadeeva *et al.* 1997)
- **A. triebeliae* Zhurb. – on *Dactylina arctica* (M.J. Richardson) Nyl., *Flavocetraria cucullata* (Bellardi) Kärnefelt & A. Thell; lower reach of Lena River; [2] (Zhurbenko 2002a)
- A. urceolata* (Elenkin) V.J. Rico, Calat. & Barreno, syn. *Conida urceolata* Elenkin – on *Aspicilia hispida* Mereschk.; lower portion of Volga basin; [1] (Calatayud *et al.* 2004)
- A. varians* (Davies) Nyl., syn. *Arthonia glaucomaria* Nyl. – on *Lecanora rupicola* (L.) Zahlbr.; Karelia, Polar Ural; [9] (Norrlin 1876; Räsänen 1939; Zhurbenko 2002b)
- Asterophoma mazaediicola* D. Hawksw. – on *Chaenothecopsis pusilla* (Ach.) A.F.W. Schmidt; Baikal Lake Region (23 Jul 1983, A.N. Titov 571, LE); [1]
- Athelia arachnoidea* (Berk.) Jülich – on various epiphytic lichens; Leningrad Region; [1] (Himmelbrant 2005)
- Bachmanniomyces uncialicola* (Zopf) D. Hawksw. – on *Cladonia amaurocraea* (Flörke) Schaer., *C. arbuscula* (Wallr.) Flotow, *C. pyxidata* (L.) Hoffm., *C. stellaris* (Opiz) Pouzar & Vězda, *C. uncialis* (L.) F.H. Wigg.; Murmansk Region (M. Laurila, H), Karelia, Tuva, Taimyr Peninsula; [7] (Zhurbenko 1998; Zhurbenko & Otnyukova 2001; Zhurbenko & Pospelova 2001; Zhurbenko & Himmelbrant 2002; Zhurbenko & Ahti 2005)
- Biatoropsis usnearum* Räsänen – on *Usnea* spp.; Karelia, Leningrad Region; [7] (Räsänen 1939; Diederich & Christiansen 1994)
- Capronia peltigerae* (Fuckel) D. Hawksw. – on *Peltigera praetextata* (Sommerf.) Zopf; Karelia; [1] (Alstrup *et al.* 2005)
- Carbonea aggregantula* (Müll. Arg.) Diederich & Triebel, syn. *Lecidea aggregantula* Müll. Arg. – on *Lecanora cf. intricata* (Ach.) Ach., *L. cf. leucococca* Sommerf., *L. polytropa* (Hoffm.) Rabenh.; Karelia, Franz Josef Land, Putorana Plateau; [6] (Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Alstrup *et al.* 2005)
- C. supersarsa* (Nyl.) Hertel, syn. *Lecidea diexcipula* D. Hawksw. & Alstrup – on *Lecanora polytropa*, *L. cf. dispersa* (Pers.) Sommerf.; Karelia, Franz Josef Land, Putorana Plateau; [5] (Zhurbenko & Santesson 1996; Zhurbenko 2000; Zhurbenko & Himmelbrant 2002)
- C. vitellinaria* (Nyl.) Hertel, syn. *Lecidea vitellinaria* Nyl., *Nesolechia vitellinaria* (Nyl.) Rehm – on *Candelariella coralliza* (Nyl.) H. Magn., *C. kuusamoënsis* Räsänen, *C. cf. placodizans* (Nyl.) H. Magn., *C. vitellina* (Hoffm.) Müll. Arg.; Murmansk Region, Karelia, Caucasus, Franz Josef Land, Polar Ural, Taimyr Peninsula, Putorana Plateau, Baikal Lake Region, Kamchatka Peninsula, Chukotka; [26] (Norrlin 1876; Räsänen 1939, 1943; Zhurbenko & Santesson 1996; Zhurbenko 1998, 2002b; Urbanavichene & Urbanavichus 1999; Zhurbenko & Hafellner 1999; Blinkova & Urbanavichus 2005; Neshataeva *et al.* 2006)
- Cecidonia umbonella* (Nyl.) Triebel & Rambold, syn. *Lecidea umbonella* Nyl. – on *Lecidea lapicida* (Ach.) Ach.; Caucasus, Chukotka; [4] (Triebel & Rambold 1988; Triebel 1989; Karatygin *et al.* 1999; Hertel 2001)
- C. xenophana* (Körb.) Triebel & Rambold, syn. *Lecidea melapsepha* Nyl. – on *Porpidia* spp.; Karelia, Chukotka; [2] (Hertel & Andreev 2003; Alstrup *et al.* 2005)
- Cercidospora cephalodiorum* Triebel & Grube – on *Pilophorus cereolus* (Ach.) Th. Fr., *P. dovrensis*; Taimyr Peninsula, Putorana Plateau, Chukotka; [3] (Zhurbenko & Triebel 2005)
- C. cladoniicola* Alstrup – on *Cladonia* sp.; Northern Ural; [1] (Zhurbenko 2004)
- C. epicarphinea* (Nyl.) Grube & Hafellner, syn. *Cercidospora xanthoriae* (Wedd.) R. Sant., *C. caudata* Kernst. – on *Xanthoria elegans*; Karelia; [1] (Alstrup *et al.* 2005)

- C. epipolytropa* (Mudd) Arnold – on *Lecanora geophila* (Th. Fr.) Poelt, *L. cf. leucococca*, *L. polytropa*; Karelia, Taimyr Peninsula, Putorana Plateau, lower reach of Lena River; [7] (Räsänen 1939; Zhurbenko & Santesson 1996; Santesson 1998; Zhurbenko & Hafellner 1999; Zhurbenko 2002c; Zhurbenko & Himelbrant 2002; Alstrup *et al.* 2005)
- C. exiguella* (Nyl.) Arnold – on *Rinodina mniaraea* (Ach.) Körb.; Northern Ural; [4] (Zhurbenko 2004)
- C. lecidomae* Zhurb. & Triebel – on *Lecidoma demissum* (Rutstr.) Gotth. Schneid. & Hertel; Severnaya Zemlya, Chukotka; [5] (Zhurbenko & Triebel 2003)
- C. macrospora* (Uloth) Hafellner & Nav.-Ros., syn. *Cercidospora ulothii* Körb. – on *Protoparmeliopsis muralis* (Schreb.) M. Choisy; Karelia; [1] (Alstrup *et al.* 2005).
- C. parva* Hafellner & Ihlen – on *Baeomyces placophyllus* Ach.; Taimyr Peninsula; [4] (Zhurbenko & Santesson 1996; Ihlen 1998)
- C. punctillata* (Nyl.) R. Sant. s. lat., syn. *Cercidospora lichenicola* (Zopf) Hafellner – on *Cladonia* sp., *Mycobilimbia hypnorum* (Lib.) Kalb & Hafellner, *Peltigera malacea*, *Phaeorrhiza nimbosa* (Fr.) H. Mayrhofer & Poelt, *Pilophorus robustus* Th. Fr., *Protopannaria pezizoides*, *Psoroma hypnorum*, *Solorina crocea*, *Sphaerophorus globosus* (Huds.) Vain.; Murmansk Region, Franz Josef Land, Northern Ural, Vize Island, Taimyr Peninsula, Wrangel Island, Chukotka; [24] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko 2001, 2004; Zhurbenko & Alstrup 2004; Zhurbenko & Triebel 2005)
- C. soror* Obermayer & Triebel – on *Arthrorhaphis alpina* (Schaer.) R. Sant.; Taimyr Peninsula; [1]. (Zhurbenko 2007b)
- C. stereocaulorum* (Arnold) Hafellner – on *Stereocaulon alpinum*, *S. arcticum* Lyngé, *S. arenarium* (Savicz) Lamb, *S. botryosum*, *S. capitellatum* H. Magn., *S. condensatum* Hoffm., *S. depressum*, *S. glareosum*, *S. groenlandicum*, *S. paschale* (L.) Hoffm., *S. rivulorum*, *S. saxatile* H. Magn., *S. subcoralloides*, *S. tomentosum* Fr., *S. vesuvianum*; Murmansk Region, Polar Ural, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau, Wrangel Island, Chukotka; [45] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2000, 2001, 2002b)
- C. thamnoliicola* Ihlen – on *Thamnolia vermicularis* (Sw.) Schaer.; Severnaya Zemlya, New Siberian Islands; [2] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999)
- C. tryptetheliza* (Nyl.) Hafellner & Obermayer, syn. *Cercidospora arthrorhaphidicola* Alstrup – on *Arthrorhaphis vacillans* Th. Fr.; Franz Josef Land, Taimyr Peninsula; [2] (Zhurbenko & Santesson 1996; Zhurbenko & Pospelova 2001)
- C. verrucosaria* (Linds.) Arnold – on *Megaspora verrucosa* (Ach.) Hafellner & V. Wirth; Northern Ural; [1] (Zhurbenko 2004)
- Chaenothecopsis brevipes* Tibell – on *Arthonia* sp., *Lecanactis* sp.; Caucasus, Primorye Territory; [2] (Titov & Tibell 1993; Titov 1998)
- Ch. consociata* (Nádv.) A.F.W. Schmidt – on *Chaenotheca chrysocephala* (Ach.) Th. Fr.; Karelia, Leningrad Region, Caucasus, Nenets Autonomous Okrug, Komi Republic, Northern Ural, Altai, Kuznetskoe Upland, Sayan Mountains, Baikal Lake Region, Khabarovsk Territory, Primorye Territory, Kuril Islands; [>28] (Titov 1983, 1984, 1990, 2004; Sedel'nikova 1990; Titov & Tibell 1993; Pystina 1996; Urbanavichene 1998; Voronjuk & Makryi 2002; Kuznetsova & Himelbrant 2002; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. epithallina* Tibell – on *Chaenotheca trichialis* (Ach.) Th. Fr.; Karelia, Leningrad Region, Nizhnii Novgorod Region, Komi Republic, Northern Ural, Khabarovsk Territory, Kamchatka Peninsula; [>9] (Titov 1983, 1984, 2004; Himelbrant *et al.* 2001; Presnyakova 2001; Titov *et al.* 2004; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. hospitans* (Th. Fr.) Tibell – on *Haematomma ochroleucum* (Neck.) J.R. Laundon; Karelia; [9] (Norrlin 1876, 1878; Vainio 1927; Räsänen 1939; Laurila 1940; Auer 1943; Halonen 1993; Titov 2004)
- **Ch. leifiana* Titov, Kuznetsova & Himelbrant – on *Arthonia spadicea* Leight.; Kamchatka Peninsula; [3] (Titov *et al.* 2004)
- Ch. nigra* Tibell – hosts not indicated, the species usually grows on *Chaenotheca* spp., lignum and free living algae; Komi Republic, Northern Ural, Sakhalin Island; [>3] (Titov 2004; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. ochroleuca* (Körb.) Tibell & K. Ryman – on *Haematomma ochroleucum*, *Lecanora thysanophora* R.C. Harris; Caucasus, 'Siberia' without locality, Sayan Mountains, Khabarovsk Territory, Kamchatka Peninsula; [6] (Kalb *et al.* 1995; Titov 1998; Sedel'nikova 2001b; Otte 2004; Titov *et al.* 2004)
- Ch. pusilla* (Ach.) A.F.W. Schmidt, syn. *Embolidium elevatum* Vain., ? *Caliciella parasitica* Räsänen – on *Chaenotheca furfuracea* (L.) Tibell, *Hypocenomyce scalaris* (Ach.) M. Choisy and other lichens, free-living algae, lignum or bark; Murmansk Region, Karelia, Leningrad Region, Pskov Region, Caucasus, middle portion of Volga basin, Komi Republic, Northern Ural, Western Siberian Lowland, Putorana Plateau, middle portion of Yenisey River, Kuznetskoe Upland, Altai, Sayan Mountains, Baikal Lake Region, Kamchatka Peninsula, Khabarovsk Territory, Sakhalin Island, Primorye Territory, Kuril Islands; [>78] (Norrlin 1876; Vainio 1878, 1881; Brenner 1885; Räsänen 1939; Titov 1983, 2004; Halonen 1993; Titov & Tibell 1993; Hawksworth & Atienza 1994; Himelbrant *et al.* 2001; Voronjuk & Makryi 2002; Titov *et al.* 2004; Urbanavichene 2005; Urbanavichus & Urbanavichene 2005a; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. pusiola* (Ach.) Vain., syn. *Chaenothecopsis lignicola* (Nádv.) A.F.W. Schmidt – on *Chaenotheca* spp. and other lichens, free-living algae, lignum; Murmansk

- Region, Karelia, Leningrad Region, Caucasus, middle portion of Volga basin, Komi Republic, Northern Ural, Sayan Mountains, Baikal Lake Region, Kamchatka Peninsula, Khabarovsk Territory, Sakhalin Island, Primorye Territory, Kuril Islands; [>46] (Vainio 1878; Titov 1983, 2004; Titov & Tibell 1993; Himelbrant *et al.* 2001; Voronjuk & Makryi 2002; Titov *et al.* 2004; Urbanavichene 2005; Urbanavichus & Urbanavichene 2005a; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. savonica** (Räsänen) Tibell – on *Chaenotheca furfuracea* and other lichens, free-living algae, lignum or bark; Murmansk Region, Karelia, Leningrad Region, Caucasus, Nizhnii Novgorod Region, Central Russian Upland, Komi Republic, Northern Ural, Sayan Mountains, Baikal Lake Region, Khabarovsk Territory, Sakhalin Island, Primorye Territory, Kuril Islands; [>36] (Titov & Tibell 1993; Hawksworth & Atienza 1994; Himelbrant *et al.* 2001; Presnyakova 2001; Voronjuk & Makryi 2002; Titov 2004; Titov *et al.* 2004; Himelbrant 2005; Urbanavichene 2005; Urbanavichus & Urbanavichene 2005a; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- ***Ch. subparvoica** (Nyl.) Tibell, syn. *Caliciella subparvoica* (Nyl.) Vain. – on *Haematomma ochroleucum*; Karelia, Leningrad Region; [2] (Tibell 1999; Titov 2004)
- Ch. vainioana** (Nadv.) Tibell – on *Calicium viride* Pers. and other lichens or free-living algae growing on bark or lignum; Komi Republic, Northern Ural, Sayan Mountains, Primorye Territory; [>4] (Chabanenko 2002; Voronjuk & Makryi 2002; Titov 2004; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. viridialba** (Kremp.) A.F.W. Schmidt – on bark or lignum, occasionally on *Chaenotheca chrysocephala*; Karelia, Murmansk Region (?), Komi Republic, Northern Ural, Khabarovsk Territory; [>6] (Vainio 1881, 1927; Halonen 1993; Titov & Tibell 1993; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ch. viridireagens** (Nadv.) A. F. W. Schmidt – on *Chaenotheca ferruginea* (Turner ex Sm.) Mig. and other lichens, free-living algae, lignum or bark; Murmansk Region, Leningrad Region, Caucasus, middle portion of Volga basin, Komi Republic, Northern Ural, Sayan Mountains, Baikal Lake Region, Kamchatka Peninsula, Khabarovsk Territory, Kuril Islands; [>20] (Titov & Tibell 1993; Kuznetsova & Himelbrant 2002; Voronjuk & Makryi 2002; Titov 2004; Titov *et al.* 2004; Urbanavichene 2005; Urbanavichus & Urbanavichene 2005a; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- ***Cladosporium licheniphilum** Heuchert & U. Braun – on *Pertusaria alpina* H.E. Ahles; Altai; [1] (Heuchert & Braun 2006)
- Clypeococcum cetrariae** Hafellner – on *Flavocetraria cucullata*; lower reach of Lena River; [1] (Zhurbenko 2002a)
- C. hypocenomycis** D. Hawksw. – on *Hypocenomyce scalaris*; Karelia, middle portion of Volga basin, Komi Republic; [4] (Alstrup *et al.* 2005; Urbanavichus & Urbanavichene 2005a; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Cornutispora lichenicola** D. Hawksw. & B. Sutton – on *Allantoparmelia alpicola* (Th. Fr.) Essl., *Hypogymnia physodes*, *Diploschistes scruposus* (Schreb.) Norman, *Melanohalea olivacea*, *Tuckermannopsis sepincola* (Ehrh.) Hale; Karelia, Northern Ural; [5] (Zhurbenko 2004; Alstrup *et al.* 2005)
- Corticifraga fückelii** (Rehm) D. Hawksw. & R. Sant., syn. *Phragmonaevia fückelii* Rehm – on *Peltigera canina*, *P. collina* (Ach.) Schrad., *P. extenuata* (Vain.) Lojka, *P. praetextata*, *P. rufescens*; Murmansk Region, Karelia, Tuva, lower reach of Kolyma River; [10] (Hawksworth & Santesson 1990; Zhurbenko 2001; Zhurbenko & Otnyukova 2001; Zhurbenko & Himelbrant 2002; Zhurbenko *et al.* 2005)
- C. peltigerae** (Nyl.) D. Hawksw. & R. Sant. – on *Peltigera canina*, *P. didactyla* (With.) J.R. Laundon, *P. membranacea* (Ach.) Nyl., *P. praetextata*, *P. rufescens*, *P. scabrosa*; Murmansk Region, Karelia, Franz Josef Land, Polar and Northern Urals, Taimyr Peninsula, Altai, lower reach of Lena River, lower reach of Kolyma River; [17] (Nylander 1868; Räsänen 1939; Hawksworth & Santesson 1990; Miadlikowska & Alstrup 1995; Zhurbenko & Santesson 1996; Zhurbenko & Davydov 2000; Zhurbenko 2001, 2002b, 2004; Zhurbenko *et al.* 2002, 2005)
- C. santessonii** Zhurb. & Zavarzin – on *Lobaria linita* (Ach.) Rabenh.; Polar Ural; [1] (Zhurbenko 2007a)
- Cyphelium sessile** (Pers.) Trevis. – on *Pertusaria coccodes* (Ach.) Nyl.; Murmansk Region, Karelia, Leningrad Region; [3] (Brenner 1885; Vainio 1878; Himelbrant *et al.* 2001; Urbanavichene & Urbanavichus 2005)
- Cystobasidium hypogymniicola** Diederich & Ahti – on *Hypogymnia physodes*; Murmansk Region; [1] (Urbanavichene & Urbanavichus 2005)
- Dacampia engeliana** (Saut.) A. Massal., syn. *Pleospora engeliana* (Saut.) G. Winter – on *Solorina saccata*; Novaya Zemlya, Northern Ural, Putorana Plateau; [3] (Keissler 1928; Zhurbenko & Hafellner 1999; Zhurbenko 2004)
- D. rufescentis** (Vouaux) D. Hawksw. – on *Peltigera rufescens*; Karelia, Northern Ural; [2] (Alstrup 2004; Zhurbenko 2004)
- Dactylospora amygdalariae** Triebel – on *Amygdalaria elegantior* (H. Magn.) Hertel & Brodo, *A. panaeola* (Ach.) Hertel & Brodo; Murmansk Region, Polar Ural, Putorana Plateau, Chukotka; [21] (Triebel 1989; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2002b; Urbanavichus & Urbanavichene 2005b)

- D. athallina* (Müll. Arg.) Hafellner, syn. *Buellia athallina* Müll. Arg. — on *Baeomyces rufus* (Huds.) Rebent.; Murmansk Region; [1] (Zhurbenko 2001)
- **D. attendenda* (Nyl.) Arnold — on *Pilophorus cereolus*, *P. dovrensis*, *P. robustus*; Karelia [according to T. Ahti (pers. comm.) holotype of the species, cited as ‘Sowjetunion: ..., Arkhangelsk, “ad Onegam” ..., 3. VII. 1863, Th. Simming (H-Nyl. 11 016, ...)’ by Triebel (1989: 203), is from Pertnavolok in Karelia onegensis], Northern Ural, Taimyr Peninsula, Putorana Plateau, Chukotka; [12] (Nylander 1866a; Zhurbenko 1998, 2004; Zhurbenko & Hafellner 1999; Zhurbenko & Triebel 2005)
- D. deminuta* (Th. Fr.) Triebel, syn. *Buellia urceolata* auct., non *Buellia urceolata* Th. Fr. — on *Cladonia pocillum* (Ach.) Grognot, *Lecanora epibryon* (Ach.) Ach., *Lecidella wulfenii* (Hepp) Körb., *Lopadium coralloideum* (Nyl.) Lynge, *L. pezizoideum* (Ach.) Körb., *Micarea assimidata* (Nyl.) Coppins, *Mycobilimbia carneoalbida* (Müll. Arg.) S. Ekman & Printzen, *M. epixanthoides* (Nyl.) Vitik. et al., *M. tetramera* (De Not.) Vitik. et al., *Ochrolechia frigida* (Sw.) Lynge, *Pilophorus robustus*, *Protopannaria pezizoides*, *Psora globifera* (Ach.) A. Massal., *Rinodina turfacea* (Wahlenb.) Körb.; Karelia, Franz Josef Land., Novaya Zemlya, Polar and Northern Urals, Severnaya Zemlya, Nordenskjöld Islands, Taimyr Peninsula, Putorana Plateau, lower reach of Lena River, lower reach of Kolyma River, New Siberian Islands, Wrangel Island, Chukotka; [41] (Vainio 1883, 1909, 1922; Keissler 1928; Zhurbenko & Santesson 1996; Zhurbenko 1998, 2002b, 2004; Zhurbenko & Hafellner 1999; Karatygin et al. 1999; Zhurbenko & Pospelova 2001; Zhurbenko & Alstrup 2004; Zhurbenko & Ahti 2005; Zhurbenko & Triebel 2005; Zhurbenko et al. 2005)
- D. glaucomarioides* (Tuck.) Hafellner — on *Megaspora verrucosa*, *Ochrolechia frigida*, *O. upsaliensis* (L.) A. Massal.; Northern Ural, Taimyr Peninsula, Putorana Plateau; [5] (Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko 2004)
- D. homoclinella* (Nyl.) Hafellner — on *Lecanora campestris* (Schaer.) Hue; Northern Ural; [1] (Zhurbenko 2004)
- D. lobariella* (Nyl.) Hafellner, syn. *Abrothallus lobariellus* (Nyl.) Zopf — on *Lobaria isidiosa* (Müll. Arg.) Vain., *L. pulmonaria* (L.) Hoffm.; Northern Ural, Altai; [3] (Zhurbenko & Davydov 2000; Zhurbenko 2004)
- D. parasitica* (Flörke) Zopf — on *Megaspora verrucosa*, *Pertusaria albescens* (Huds.) M. Choisy & Werner, *P. rupestris* (DC.) Schaer.; Caucasus, Taimyr Peninsula; [3] (Zhurbenko & Santesson 1996; Otte 2004)
- D. pertusariicola* (Tuck.) Hafellner — on *Pertusaria cribellata* Branth; Polar and Northern Urals, Taimyr Peninsula, Kamchatka Peninsula; [7] (Zhurbenko & Santesson 1996; Santesson 1998; Zhurbenko 2002b, 2004; Neshataeva et al. 2005)
- D. purpurascens* Triebel — on *Amygdalaria elegantior*, *A. panaeola*, *A. pelobotryon* (Wahlenb.) Norman, *Pilophorus robustus*; Taimyr Peninsula, Putorana Plateau, Chukotka; [6] (Triebel 1989; Zhurbenko 1998; Zhurbenko & Hafellner 1999; Zhurbenko & Triebel 2005)
- D. rhyparizae* Arnold — on *Bryodina rhypariza* (Nyl.) Hafellner & Türk; Putorana Plateau; [1] (Zhurbenko & Hafellner 1999)
- D. rinodinicola* Alstrup & D. Hawksw. — on *Rinodina turfacea*; Franz Josef Land; [1] (Zhurbenko & Santesson 1996)
- D. saxatilis* (Schaer.) Hafellner, syn. *Calicium saxatile* Schaer. — on *Pertusaria excludens* Nyl., *P. globulata* Oxner & Volkova; Leningrad Region, Northern Ural, Taimyr Peninsula; [3] (Brenner 1885; Zhurbenko & Santesson 1996; Zhurbenko 2004)
- D. urceolata* (Th. Fr.) Arnold, syn. *Lecidea sociella* Nyl. — on *Lopadium pezizoideum*, *Protothelenella sphinctrinoides* (Nyl.) H. Mayrhofer & Poelt; Murmansk Region, Karelia; [5] (Nylander 1866b; Vainio 1883)
- Echinothecium cladoniae* Keissl. (not validly publ.) — on *Cladonia arbuscula*, *C. cf. cariosa* (Ach.) Spreng., *C. coccifera* (L.) Willd., *C. pyxidata*, *C. stellaris*, *C. uncialis*; Murmansk Region, Karelia, Northern Ural, Putorana Plateau; [7] (Zhurbenko 2000, 2001, 2004; Zhurbenko & Himelbrant 2002)
- E. reticulatum* Zopf — on *Parmelia omphalodes*, *P. sulcata*, *Xanthoparmelia stenophylla* (Ach.) Ahti & D. Hawksw. (as *X. somloënsis* (Gyeln.) Hale); Polar and Southern (?) Urals, Taimyr Peninsula, Altai, Tuva; [6] (Zhurbenko & Santesson 1996; Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001; Zhurbenko 2002b; Merkulova & Urbanavichus 2006)
- Endococcus apiciicola* (J. Steiner) R. Sant., syn. *Endococcus alpestris* D. Hawksw. — on *Usnea subfloridana* Stirt., *U. substerilis* Motyka; Sayan Mountains; [3] (Zhurbenko & Otnyukova 2001)
- E. nanellus* Ohlert — on *Stereocaulon condensatum*, *S. grande* (H. Magn.) H. Magn., *S. paschale*, *S. saxatile*, *S. tomentosum*; Murmansk Region, Karelia, Northern Ural, Tuva, Putorana Plateau, Baikal Lake Region (23 Aug 1996, G.P. Urbanavichus, LE 207 666), middle portion of Indigirka River (17 Jun 1976, I.I. Makarova, LE 207 667), lower reach of Kolyma River; [14] (Karatygin et al. 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2001, 2004; Zhurbenko & Otnyukova 2001; Zhurbenko & Ahti 2005; Zhurbenko et al. 2005)
- E. perpusillus* Nyl., syn. *Endococcus macrosporus* (Arnold) Nyl., *E. fusiger* Th. Fr. & Almq. — on *Mycobilimbia lobulata* (Sommerf.) Hafellner, *Rhizocarpon eupetraeoides* (Nyl.) Blomb. & Forss., *R. lavatum* (Fr.) Hazsl., *R. obscuratum* (Ach.) A. Massal.; Murmansk Region (23 Jul 2001, I. Zhdanov, LE), Karelia, Taimyr Peninsula, Putorana Plateau; [6] (Zhurbenko & Santesson 1996; Zhurbenko 2000; Alstrup et al. 2005)
- E. propinquus* (Körb.) D. Hawksw., syn. *Tichothecium gemmiferum* (Tayl.) Körb. — on *Aspicilia* sp., *Lecidea lapicida*, *Porpidia flavocaerulescens* (Hornem.) Hertel & A.J. Schwab,

- P. melinodes* (Körb.) Gowan & Ahti, *P. tuberculosa* (Sm.) Hertel & Knoph, *Protoparmelia* sp., *Verrucaria aethiobola* Wahlenb., *V. subviridula* Vain.; Murmansk Region (13 Jul 2001, I. Zhdanov, LE), Karelia, Leningrad Region, Franz Josef Land, Novaya Zemlya, Polar Ural, Taimyr Peninsula, Putorana Plateau, Chukotka; [21] (Nylander 1875; Norrlin 1878; Brenner 1885; Vainio 1921; Räsänen 1939; Triebel 1989; Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko 2002b; Zhurbenko & Himelbrant 2002; Alstrup *et al.* 2005)
- E. rugulosus* Nyl. – on *Acarospora* sp., *Amygdalaria consentiens* (Nyl.) Hertel, Brodo & Mas. Inoue, *A. pelobotryon*, *Aspicilia gibbosa* (Ach.) Körb., *A. hyperboreorum* (Zahlbr.) Oxner, *Rhizocarpon* sp.; Murmansk Region, Karelia, Leningrad Region, Franz Josef Land, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau; [14] (Norrin 1876; Vainio 1921; Zhurbenko & Santesson 1996; Zhurbenko 1998; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko & Pospelova 2001; Alstrup 2004; Alstrup *et al.* 2005; Urbanavichus *et al.* in press)
- E. stigma* (Körb.) Stizenb. – on *Rhizocarpon geographicum* (L.) DC.; Polar Ural; [1] (Zhurbenko 2002b)
- Epibryon conductrix* (Norman) Nik. Hoffm. & Hafellner, syn. *Stignidium catapyrenii* Cl. Roux & Triebel – on *Catapyrenium cinereum* (Pers.) Körb.; Northern Ural, Putorana Plateau; [2] (Zhurbenko & Hafellner 1999; Zhurbenko 2004)
- E. parvipunctum* (Stein) Diederich – on *Thelidium aeneovinosum* (Anzi) Arnold; 'Siberia' without locality; [1] (van den Boom *et al.* 1998)
- Epicladonia sandstedei* (Zopf) D. Hawksw. – on *Cladonia gracilis* (L.) Willd., *C. pocillum*, *C. pyxidata*; Murmansk Region, Northern Ural, Taimyr Peninsula; [9] (Zhurbenko 1998; Zhurbenko & Himelbrant 2002; Zhurbenko 2004; Zhurbenko & Alstrup 2004)
- E. simplex* D. Hawksw. – on *Cladonia cenotea* (Ach.) Schaer., *C. coccifera*, *C. cf. merochlorophaea* Asah., *C. pyxidata*, *C. symphyrcarpia* (Flörke) Fr.; Murmansk Region, Karelia, Northern Ural, Tuva; [5] (Zhurbenko 2004; Zhurbenko & Alstrup 2004; Alstrup *et al.* 2005; Alstrup & Ahti 2007)
- E. stenospora* (Harm.) D. Hawksw. – on *Cladonia amaurocraea*; Taimyr Peninsula; [1] (Zhurbenko & Pospelova 2001)
- **Epilichen stellatus* Triebel – on *Lecidea* cf. *tessellata* Flörke; Chukotka; [1] (Triebel 1989)
- Evernicola flexispora* D. Hawksw. – on *Nephroma arcticum* (L.) Torss.; Murmansk Region (1930, O. Hulkkonen, H), Karelia (1939, V. Räsänen, H), Northern Ural; [4] (Zhurbenko 2004)
- Geltingia associata* (Th. Fr.) Alstrup & D. Hawksw. – on *Ochrolechia androgyna* (Hoffm.) Arnold, *O. frigida*, *O. cf. inaequatula* (Nyl.) Zahlbr., *Thamnolia vermicularis*; Karelia, Franz Josef Land, Izvestii TsIK Islands, Taimyr Peninsula; [11] (Zhurbenko & Himelbrant 2002; Zhurbenko & Santesson 1996)
- Graphium apthosae* Alstrup & D. Hawksw. – on *Peltigera apthosae*, *P. leucophlebia* (Nyl.) Gyeln.; Murmansk Region (G.P. Urbanavichus, pers. comm.), Karelia, Franz Josef Land, Northern Ural, Altai, lower reach of Lena River; [8] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Davydov 2000; Alstrup 2004; Zhurbenko 2004)
- Homostegia piggotii* (Berk. & Broome) P. Karst., syn. *Dothidea piggotii* Berk. & Broome – on *Parmelia omphalodes*, *P. saxatilis*; Karelia, Leningrad Region (T. Ahti, pers. comm.), lower reach of Kolyma River; [4]. (Alstrup *et al.* 2005; Zhurbenko & Ahti 2005; Zhurbenko *et al.* 2005)
- Illosporopsis christiansenii* (B.L. Brady & D. Hawksw.) D. Hawksw., syn. *Hobsonia christiansenii* B.L. Brady & D. Hawksw. – on *Parmelia sulcata*, *Physcia* spp.; Leningrad Region; [1] (Himelbrant 2005)
- Illosporium carneum* Fr. – on *Peltigera didactyla*, *P. rufescens*; Murmansk Region, Karelia, Northern Ural, Altai (10 Aug 1987, Zolotukhin, LE 207 388b), Taimyr Peninsula, Kamchatka Peninsula; [10] (Zhurbenko & Santesson 1996; Zhurbenko & Himelbrant 2002; Zhurbenko 2004; Neshataeva *et al.* 2005; Zhurbenko & Ahti 2005; Urbanavichus *et al.* in press)
- Intralichen christiansenii* (D. Hawksw.) D. Hawksw. & M.S. Cole, syn. *Bispora christiansenii* D. Hawksw. – on *Lecania cyrtella* (Ach.) Th. Fr., *Lecanora* sp.; Taimyr Peninsula, Putorana Plateau; [2] (Zhurbenko 1998; Zhurbenko & Hafellner 1999)
- I. lichenicola* (M.S. Christ. & D. Hawksw.) D. Hawksw. & M.S. Cole, syn. *Trimmatostroma lichenicola* M.S. Christ. & D. Hawksw. – on *Caloplaca* sp., *Candelariella vitellina*; middle portion of Volga basin, Franz Josef Land, Taimyr Peninsula; [3] (Zhurbenko & Santesson 1996; Urbanavichus & Urbanavichene 2005a)
- Karsteniomyces peltigerae* (P. Karst.) D. Hawksw. – on *Peltigera rufescens*; Karelia, middle portion of Lena River; [3] (Zhurbenko & Himelbrant 2002; Alstrup & Ahti 2007)
- K. tuberculosus* Alstrup & D. Hawksw. – on *Peltigera leucophlebia*, *P. rufescens*; Karelia, Northern Ural; [2] (Alstrup 2004; Zhurbenko 2004)
- Lambinonia strigulae* (Elenkin & Woron.) Sérus. & Diederich, syn. *Melanconium strigulae* Elenkin & Woron. – on *Strigula buxi* Chodat; Caucasus; [3] (Elenkin & Woronichin 1908; Sérusiaux & Diederich 2005)

- Lasiosphaeriopsis cephalodiorum* (Rostr.) Alstrup, syn. *Sphaeria cephalodiorum* Rostr. — on *Amygdalaria panaeola*; Putorana Plateau; [1] (Zhurbenko & Triebel 2005)
- **L. pilophori* Zhurb. & Triebel — on *Pilophorus dovrensis*; Putorana Plateau; [1] (Zhurbenko & Triebel 2005)
- L. stereocaulicola* (Linds.) O.E. Erikss. & R. Sant. — on *Stereocaulon alpinum*, *S. arenarium*, *S. botryosum*, *S. condensatum*, *S. depressum*, *S. glareosum*, *S. groenlandicum*, *S. paschale*, *S. rivulorum*, *S. saxatile*; Franz Josef Land, Polar Ural, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau, Baikal Lake Region (1996, G.P. Urbanavichus, LE), New Siberian Islands, Wrangel Island, Chukotka; [36] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2002b)
- Lettauia cladoniicola* D. Hawksw. & R. Sant. — on *Cladonia gracilis*; Putorana Plateau, Northern Ural; [3] (Zhurbenko 2000, 2004)
- Libertiella curvispora* D. Hawksw. & Miadl. — on *Peltigera praetextata*; Karelia; [1] (Alstrup *et al.* 2005)
- L. malmedyensis* Speg. & Roum. — on *Peltigera didactyla*; Karelia; [1] (Alstrup 2004)
- Lichenochora weillii* (Werner) Hafellner & R. Sant., syn. *Didymella weillii* Werner — on *Physconia muscigena* (Ach.) Poelt; Franz Josef Land; [1] (Zhurbenko & Santesson 1996)
- Lichenoconium erodens* M.S. Christ. & D. Hawksw. — on *Cladonia stygia* (Fr.) Ruoss, *Lecanora pulicaris* (Pers.) Ach., *L. symmicta* (Ach.) Ach., *Parmelia omphalodes*, *Parmeliopsis ambigua* (Wulfen) Nyl.; Karelia, Franz Josef Land, Komi Republic, Northern Ural; [7] (Zhurbenko & Santesson 1996; Zhurbenko & Himelbrant 2002; Zhurbenko 2004; Alstrup *et al.* 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- L. lecanorae* (Jaap) D. Hawksw. — on *Abrothallus parmiliarum*, *Allantoparmelia alpicola*, *Arctoparmelia centrifuga* (L.) Hale, *Arctopeltis thuleana* Poelt, *Biatora* sp., *Brodoa intestiniformis* (Vill.) Goward, *Bryodina rhypariza*, *Bryonora castanea* (Hepp) Poelt, *Lecanora carpinea*, *L. circumborealis* Brodo & Vitik., *L. sulphurea* (Hoffm.) Ach., *Melanelia hepatizon* (Ach.) A. Thell, *Rhizoplaca chrysoleuca*, *R. melanophthalma* (DC.) Leuckert & Poelt; Karelia, Franz Josef Land, Polar and Northern Urals, Taimyr Peninsula, Putorana Plateau; [15] (Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko 2002b, 2004; Zhurbenko & Himelbrant 2002)
- L. lichenicola* (P. Karst.) Petr. & Syd. — on *Physcia stellaris*; Karelia; [1] (Alstrup *et al.* 2005)
- L. pyxidatae* (Oudem.) Petr. & Syd. — on *Cladonia chlorophaea* (Sommerf.) Spreng., *C. cf. convoluta* (Lam.) Anders, *C. macroceras* (Delise) Hav., *C. pocillum*; Franz Josef Land, Altai, Severnaya Zemlya, lower reach of Lena River, Wrangel Island; [5] (Zhurbenko & Santesson 1996; Zhurbenko & Davydov 2000; Zhurbenko & Alstrup 2004)
- L. usneae* (Anzi) D. Hawksw. — on *Bryocaulon divergens* (Ach.) Kärnefelt, *Hypogymnia physodes*, *Lecanora chlarotera* Nyl.; Karelia, Franz Josef Land; [4] (Zhurbenko & Santesson 1996)
- L. xanthoriae* M.S. Christ. — on *Melanohalea exasperata* (De Not.) O. Blanco *et al.*, *Tuckermannopsis sepincola*, *Xanthoria candelaria* (L.) Th. Fr.; Karelia; [2] (Zhurbenko & Himelbrant 2002; Alstrup *et al.* 2005)
- Lichenodiplis lecanorae* (Vouaux) Dyko & D. Hawksw. — on *Ochrolechia szatalaënsis* Verseghy; Kamchatka Peninsula (22 Jul 2004, D.E. Himelbrant & E.S. Kuznetsova, LE 210 464); [1]
- **L. lichenicola* Dyko & D. Hawksw. — on *Rinodina septentrionalis* Malme; Taimyr Peninsula, Altai; [2] (Hawksworth & Dyko 1979; Zhurbenko & Davydov 2000)
- Lichenopeltella peltigericola* (D. Hawksw.) R. Sant., syn. *Actinopeltis peltigericola* D. Hawksw. — on *Peltigera praetextata*, *P. rufescens*; Karelia, Northern Ural; [3] (Alstrup 2004; Zhurbenko 2004; Alstrup *et al.* 2005)
- L. ramalinae* Etayo & Diederich — on *Ramalina* sp.; Primorye Territory; [1] (Aproot *et al.* 1997)
- Lichenosticta alcicornaria* (Linds.) D. Hawksw. — on *Cladonia pocillum*, *C. pyxidata*, *C. subcervicornis* (Vain.) Kernst.; Murmansk Region, Nenets Autonomous Okrug, Northern Ural; [5] (Zhurbenko 2004; Zhurbenko & Alstrup 2004)
- Lichenostigma cosmopolites* Hafellner & Calat., syn. *Echinothecium reticulatum* auct. pro parte — on *Xanthoparmelia stenophylla* (as *X. somloënsis*); Karelia; [1] (Alstrup *et al.* 2005)
- L. elongatum* Nav.-Roz. & Hafellner — on *Lobothallia alphoplaca* (Wahlenb.) Hafellner; Northern Ural; [1] (Zhurbenko 2004)
- L. maureri* Hafellner — on *Usnea filipendula* Stirt., *U. fulvovireagens* (Räsänen) Räsänen, *U. lapponica* Vain. var. *altaica* Räsänen, *U. scabrata* Nyl.; Caucasus, Altai, Tuva; [9] (Navarro-Rosinés & Hafellner 1996; Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001)
- L. rugosum* G. Thor — on *Diploschistes scruposus*; Northern Ural, Altai, Chukotka; [4] (Karatygin *et al.* 1999; Zhurbenko & Davydov 2000; Zhurbenko 2004)
- Limoniella adnata* Hafellner & Nav.-Ros. — on *Placidium squamulosum* (Ach.) Breuss; middle portion of Indigirka River; [3] (Diederich & Etayo 2000)
- Merismatium coccisporum* (Norman) Vouaux — on *Amygdalaria elegantior*, *Lepraria* sp.; Taimyr Peninsula, middle portion of Indigirka River (24 Jun 1976, I.I.

- Makarova, LE 207 128), Chukotka; [5] (Triebel 1989; Zhurbenko & Santesson 1996; Karatygin *et al.* 1999)
- M. decolorans* (Arnold) Triebel – on *Arthrorhaphis alpina*, *Cladonia pyxidata*, *Stereocaulon alpinum*, *S. condensatum*; Murmansk Region, Putorana Plateau; [4] (Zhurbenko & Hafellner 1999; Zhurbenko 2001)
- M. heterophractum* (Nyl.) Vouaux, syn. *Phaeocyrtis consocians* (Nyl.) Vain. – on *Biatora subduplex* (Nyl.) Printzen, *B. vernalis* (L.) Fr., *Cladonia* sp.; Murmansk Region, Polar Ural, Putorana Plateau, Baikal Lake Region, Chukotka; [8] (Vainio 1921; Triebel 1989; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2002b)
- M. nigrifellum* (Nyl.) Vouaux – on *Biatora* sp., *Megaspora verrucosa*, *Mycobilimbia carneoalbida*, mosses and green algae; Polar Ural, Taimyr Peninsula (24 Jul 1983, M.P. Zhurbenko 83 106b, LE), Chukotka; [4] (Triebel 1989; Karatygin *et al.* 1999; Zhurbenko 2002b)
- M. peregrinum* (Flot.) Triebel, syn. *Endococcus triphractus* Nyl. – on *Aspicilia* sp.; Leningrad Region, Polar Ural (?); [2] (Brenner 1885; Zhurbenko 2002b)
- Microcalicium arenarium* (A. Massal.) Tibell – on *Psilolechia lucida* (Ach.) M. Choisy and free-living green algae; Murmansk Region, Karelia, Leningrad Region, Caucasus, Komi Republic, Northern Ural, Omsk Region; [>9] (Roms 1975; Titov 1984; Himelbrant *et al.* 2001; Urbanavichus & Urbanavichene 2004; Urbanavichene 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- M. disseminatum* (Ach.) Vain. – on *Chaenotheca trichialis* and the other species of Caliciales, on free-living green algae, also as saprophyte on bark and lignum; Murmansk Region, Karelia, Leningrad Region, Arkhangel'sk Region, Caucasus, middle portion of Volga basin, Komi Republic, Northern Ural, Western Siberian Lowland, Sayan Mountains, Baikal Lake Region, Kuril Islands, Kamchatka Peninsula; [>22] (Nylander 1866b; Norrlin 1876; Vainio 1881, 1927, 1928; Titov 1984, 1990; Bredkina *et al.* 1991; Himelbrant *et al.* 2001; Otte 2004; Titov *et al.* 2004; Urbanavichus & Urbanavichene 2004; Zhdanov 2004; Urbanavichene 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Monodictys fuliginosa* Etayo – on *Lobaria pulmonaria*; Northern Ural, Tuva; [2] (Zhurbenko & Otnyukova 2001; Zhurbenko 2004)
- Muellerella erratica* (A. Massal.) Hafellner & V. John, syn. *Muellerella pygmaea* (Körb.) D. Hawksw. var. *athallina* (Müll. Arg.) Triebel, *Tichothecium microcarpum* (Arnold) Sacc. – on *Aspicilia desertorum* (Kremp.) Mereschk, *Caloplaca cerina*, *Lecanora polytropa*, *Lecidea auriculata* Th. Fr.; Karelia, lower portion of Volga basin (Astrakhan' Region, Bogdo Mt., C. Mereschkovsky; Lichenes Rossiae exsiccati 16, H, det. V. Alstrup), Polar and Northern Urals, Taimyr Peninsula, Putorana Plateau; [10] (Räsänen 1939; Zhurbenko & Hafellner 1999; Zhurbenko 2002b, 2004; Triebel 2006)
- M. hospitans* Stizenb., syn. *Muellerella polyspora* Müll. Arg. var. *hospitans* (Stizenb.) Keissl. – on *Bacidia rubella* (Hoffm.) A. Massal.; Caucasus, Taimyr Peninsula; [2] (Zhurbenko & Santesson 1996; Otte 2004)
- M. lichenicola* (Fr.) D. Hawksw. – on *Caloplaca* sp., *Lecidea lapicida*, *Lecidella* sp., *Ochrolechia* sp., *Tephromela atra* (Huds.) Hafellner, *Toninia squalida* (Ach.) A. Massal., *Xanthomendoza borealis* (R. Sant. & Poelt) Søchting, Kärnefelt & S.Y. Kondr., *Xanthoria elegans*; Franz Josef Land, Taimyr Peninsula, Putorana Plateau, lower reach of Lena River, Chukotka (29 Jul 1975, I.I. Makarova, LE 207 229a); [13] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999)
- M. pygmaea* (Körb.) D. Hawksw. s. lat. – on *Buellia* sp., *Caloplaca cerina* (Hedwig) Th. Fr., *Lecanora dispersa*, *L. hagenii* (Ach.) Ach., *L. polytropa*, *Lecidea lapidica* var. *pantherina* Ach., *L. cf. tessellata*, *Pertusaria* sp., *Rhizocarpon geographicum*, *Xanthoria elegans*; Karelia, Leningrad Region, Franz Josef Land, lower portion of Volga basin (26 May 192... (?), V.P. Savicz, LE 207 177), Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau (1985, M.P. Zhurbenko 8545, 8569, LE 207 190, 207 186), New Siberian Islands, Chukotka; [65] (Norrin 1878; Vainio 1883, 1921; Räsänen 1939; Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko & Himelbrant 2002)
- M. ventosicola* (Mudd) D. Hawksw., syn. *Muellerella pygmaea* (Körb.) D. Hawksw. var. *ventosicola* (Mudd) Triebel – on *Ophioparma ventosa* (L.) Norman, *Rhizocarpon lavatum*; Karelia, Polar and Northern Urals, Altai; [6] (Räsänen 1939; Zhurbenko & Davydov 2000; Zhurbenko 2002b, 2004; Zhurbenko & Himelbrant 2002; Alstrup *et al.* 2005)
- Nanostictis peltigerae* M.S. Christ. – on *Peltigera aphthosa*, *P. leucophlebia*, *P. polydactylon* (Neck.) Hoffm.; Murmansk Region (G.P. Urbanavichus, pers. comm.), Karelia, Taimyr Peninsula; [4] (Alstrup 2004; Alstrup *et al.* 2005)
- Nectriopsis lecanodes* (Ces.) Diederich & Schroers – on *Peltigera aphthosa*, *P. canina*, *P. collina*, *P. leucophlebia*, *P. membranacea*; Northern Ural, Altai, Tuva; [7] (Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001; Zhurbenko 2004)
- Neolamya peltigerae* (Mont.) Theiss. & Syd. – on *Peltigera didactyla*, *P. cf. horizontalis* (Huds.) Baumg., *P. cf. polydactylon*, *P. praetextata*, *P. rufescens*; Northern Ural, Putorana Plateau, Altai, Tuva, Khabarovsk Territory; [8] (Zhurbenko & Hafellner 1999; Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001; Zhurbenko 2004; Alstrup & Ahti 2007)
- Nesolechia cetrariicola* (Linds.) Arnold – on *Cetraria ericetorum* Opiz, *C. rassadiniae* T. Makryi; Murmansk

- Region, Putorana Plateau; [2] (Zhurbenko & Hafellner 1999; Zhurbenko 2001)
- Niesslia cladoniicola* D. Hawksw. & W. Gams – on *Cladonia pyxidata*, *Cladonia* sp.; Karelia, Taimyr Peninsula, 'Krasnoyarsk Territory' without locality; [3] (Alstrup 2004; Zhurbenko & Alstrup 2004; Alstrup *et al.* 2005)
- **Odontotrema rhizocarpicola* Zhurb., Diederich & Himelbrant – on *Rhizocarpon geographicum*; Karelia; [1] (Diederich *et al.* 2002)
- **O. santessonii* Zhurb., Etayo & Diederich – on *Thamnolia vermicularis*; Franz Josef Land, Izvestii TsIK Islands, Taimyr Peninsula, Chukotka; [4] (Diederich *et al.* 2002)
- **O. thamnoliae* Zhurb., Diederich & Etayo – on *Thamnolia vermicularis*; Murmansk Region, Severnaya Zemlya, Taimyr Peninsula, Chukotka; [5] (Diederich *et al.* 2002)
- Opegrapha phaeophysciae* R. Sant., Diederich, Ertz & Christnach – on *Phaeophyscia hispidula* (Ach.) Moberg; Primorye Territory; [3] (Ertz *et al.* 2005)
- O. pulvinata* Rehm, syn. *Celidium pulvinatum* Rehm – on *Dermatocarpon deminuens* Vain., *D. luridum* (With.) J.R. Laundon, *D. miniatum* (L.) W. Mann var. *complicatum* (Lightf.) Th. Fr.; Karelia; [3] (Räsänen 1939)
- Paranectria oropensis* (Ces.) D. Hawksw. & Piroz. – on *Physconia detersa* (Nyl.) Poelt; Sayan Mountains; [1] (Zhurbenko & Otnyukova 2001)
- Pezizella epithallina* (W. Phillips & Plowr.) Sacc. – on *Peltigera didactyla*; Murmansk Region, Taimyr Peninsula; [3] (Zhurbenko & Santesson 1996; Urbanavichus *et al.* in press)
- Phacopsis cephalodioides* (Nyl.) Triebel & Rambold – on *Hypogymnia physodes*; Karelia, Northern Ural, Tuva; [4] (Zhurbenko & Otnyukova 2001; Zhurbenko & Himelbrant 2002; Zhurbenko 2004)
- Ph. huuskonenii* Räsänen – hosts not indicated (the species is confined to *Bryoria* spp.); Caucasus, Baikal Lake Region; [2] (Urbanavichus & Urbanavichene 2004)
- Ph. oxyspora* (Tul.) Triebel & Rambold s. lat., syn. *Nesolechia oxyspora* (Tul.) A. Massal. – on *Melanohalea infumata* (Nyl.) O. Blanco *et al.*, *M. olivacea*, *Parmelia fraudans*, *P. omphalodes*, *P. saxatilis*, *P. sulcata*, *Platismatia glauca*, *Xanthoparmelia conspersa*; Karelia, Leningrad Region, Polar and Northern Urals, Western Siberian Lowland, Putorana Plateau, Altai, Tuva, Sayan Mountains; [25] (Brenner 1885; Vainio 1928; Räsänen 1939; Zhurbenko & Hafellner 1999; Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001; Zhurbenko 2002b; Zhurbenko & Himelbrant 2002; Zhurbenko 2004; Zhurbenko & Ahti 2005)
- Phaeopyxis punctum* (A. Massal.) Rambold, Triebel & Coppins, syn. *Lecidea cladoniaria* Nyl. – on *Cladonia parasitica* (Hoffm.) Hoffm., *C. uncialis*; Northern Ural, lower reach of Kolyma River; [4] (Zhurbenko 2004; Zhurbenko *et al.* 2005)
- Phaeospora arctica* Horáková & Alstrup – on *Allocetraria madreporiformis* (Ach.) Kärnefelt & A. Thell; Severnaya Zemlya; [1] (Zhurbenko & Santesson 1996)
- Ph. peltigericola* D. Hawksw. – on *Peltigera leucophlebia*, *P. rufescens*; Northern Ural, Putorana Plateau, Altai; [3] (Zhurbenko & Hafellner 1999; Zhurbenko & Davydov 2000; Zhurbenko 2004)
- Ph. rimosicola* (Leight. ex Mudd) Hepp – on *Aspicilia calcarea* (L.) Mudd, *Rhizocarpon* sp.; Karelia, Leningrad Region, Chukotka; [4] (Vainio 1883, 1921; Karatygin *et al.* 1999)
- Phaeosporobolus alpinus* R. Sant., Alstrup & D. Hawksw. – on *Caloplaca ammiospila* (Wahlenb.) H. Olivier, *Ochrolechia androgyna*, *O. frigida*, *O. upsaliensis*, *Parmelia sulcata*, *Pertusaria coriacea* (Th. Fr.) Th. Fr., *P. dactylina* (Ach.) Nyl., *P. ophthalmiza* (Nyl.) Nyl.; Murmansk Region, Karelia, Franz Josef Land, Komi Republic, Polar and Northern Urals, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau, lower reach of Kolyma River; [30] (Zhurbenko & Santesson 1996; Zhurbenko 1998, 2001, 2002b, 2004; Zhurbenko & Hafellner 1999; Zhurbenko & Pospelova 2001; Zhurbenko & Himelbrant 2002; Zhurbenko *et al.* 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Ph. usneae* D. Hawksw. & Hafellner – on *Evernia mesomorpha* Nyl., *E. perfragilis* Llano, *Ramalina pollinaria* (Westr.) Ach., *Usnea filipendula*, *U. glabrescens* (Vain.) Vain., *U. substerilis*; Karelia, Northern Ural, Taimyr Peninsula, Altai, Tuva, Sayan Mountains; [6] (Zhurbenko & Santesson 1996; Zhurbenko & Davydov 2000; Zhurbenko & Otnyukova 2001; Zhurbenko 2004; Alstrup *et al.* 2005)
- **Phoma caloplacae* D. Hawksw. – on *Caloplaca cerina*; middle portion of Yenisey River; [1] (Hawksworth 1981)
- Ph. cytospora* (Vouaux) D. Hawksw. – on *Hypogymnia physodes*, *Parmelia sulcata*; Karelia; [1] (Zhurbenko & Himelbrant 2002)
- Ph. peltigerae* (P. Karst.) D. Hawksw. – on *Peltigera membranacea*; Karelia; [1] (Alstrup *et al.* 2005)
- Phyllosticta galligena* Moreau – on *Parmelia saxatilis*; Karelia; [1] (Alstrup *et al.* 2005)
- Plectocarpon cladoniae* R. Sant. – on *Cladonia pocillum*, *C. pyxidata*; Murmansk Region, Karelia; [2] (Zhurbenko & Himelbrant 2002; Zhurbenko & Alstrup 2004)
- P. encausticum* (Nyl.) R. Sant. – on *Brodoa intestiniformis*; Ural; [1] (Ertz *et al.* 2005)

- P. lambinonii* Diederich & Etayo – on *Lobaria isidiosia*; Primorye Territory; [1] (Diederich & Etayo 1994; Ertz *et al.* 2005)
- P. lichenum* (Sommerf.) D. Hawksw., syn. *Dothidea lichenum* Sommerf. – on *Lobaria pulmonaria*; Karelia, Northern Ural, Altai, Primorye Territory; [6] (Zhurbenko & Davydov 2000; Zhurbenko 2004; Ertz *et al.* 2005; Zhurbenko & Ahti 2005)
- P. linitae* (R. Sant.) Wedin & Hafellner, syn. *Arthonia linitae* R. Sant. – on *Lobaria linita*; Polar Ural, Taimyr Peninsula; [4] (Zhurbenko & Santesson 1996; Zhurbenko 2002b; Ertz *et al.* 2005)
- P. nephromeum* (Norman) R. Sant. – on *Nephroma bellum* (Spreng.) Tuck.; Murmansk Region; Kamchatka Peninsula (26 Jul 2004, D.E. Himelbrant & E.S. Kuznetsova, LE); [2] (Urbanavichus *et al.* in press)
- P. peltigerae* Zhurb., Ertz, Diederich & Miadl. – on *Peltigera leucophlebia*; Karelia, Northern Ural; [2] (Ertz *et al.* 2003)
- **Pleospora aquatica* Tretiach & Nimis – on *Aspicilia supertegens* Arnold; Baikal Lake Region; [1] (Tretiach & Nimis 1999)
- Polycoccum bryonthae* (Arnold) Vězda – on *Lecanora epibryon*; Putorana Plateau; [1] (Zhurbenko & Hafellner 1999)
- P. peltigerae* (Fuckel) Vězda – on *Peltigera rufescens*; Northern Ural; [1] (Zhurbenko 2004)
- **P. superficiale* D. Hawksw. & Miadl. – on *Peltigera malacea*; Arkhangel'sk Region; [1] (Hawksworth & Miadlikowska 1997)
- P. tryptelioides* (Th. Fr.) R. Sant. – on *Stereocaulon condensatum*, *S. glareosum*, *S. grande*, *S. groenlandicum*, *S. paschale*, *S. rivulorum*, *S. saxatile*, *S. symphycheilum* Lamb; Murmansk Region, Karelia, Polar and Northern Urals, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau, middle portion of Indigirka River (1976, I.I. Makarova, LE 207 375), Sakhalin Island (1996, A.A. Dobrysh, LE 207 381), Chukotka; [19] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2001, 2002b, 2004; Zhurbenko & Ahti 2005)
- Pronectria erythrinella* (Nyl.) Lowen – on *Peltigera canina*, *P. didactyla*; Karelia, Valdai, Northern Ural; [3] (Rossman *et al.* 1999; Zhurbenko & Himelbrant 2002; Zhurbenko 2004)
- P. leptaleae* (J. Steiner) Lowen – on *Physcia stellaris*; Komi Republic; [1] (V. Alstrup & J.-O. Hermansson, pers. comm.)
- P. ornamentata* (D. Hawksw.) Lowen, syn. *Xenonectriella ornamentata* (D. Hawksw.) Rossman – on *Peltigera didactyla*; Karelia; [1] (Zhurbenko & Himelbrant 2002)
- P. robergi* (Mont. & Desm.) Lowen, syn. *Nectria robergi* Mont. & Desm. – on *Peltigera canina*, *P. didactyla*, *P. horizontalis*, *P. leucophlebia*, *P. praetextata*, *P. rufescens*, *Solorina crocea*; Murmansk Region, Karelia, Northern Ural, Altai (10 Jun 1987, Zolotukhin, LE 207 388a), Sayan Mountains, Baikal Lake Region (21 Jul 1994, G.P. Urbanavichus, LE 207 382); [8] (Zhurbenko & Otnyukova 2001; Zhurbenko 2004; Alstrup *et al.* 2005; Urbanavichus *et al.* in press)
- P. solorinae* Lowen & R. Sant. (ined.) – on *Solorina spongiosa* (Ach.) Anzi; Franz Josef Land, Vize Island; [2] (Zhurbenko & Santesson 1996)
- P. tenuispora* (D. Hawksw.) Lowen – on *Peltigera cf. polydactylon*; lower reach of Lena River; [1] (Triebel 2003)
- P. tibellii* ('tibellae') Zhurb. – on *Cladonia symphycarpia*; Karelia; [1] (Alstrup *et al.* 2005)
- P. tincta* (Fuckel) Lowen – on *Anaptychia ciliaris* (L.) Körb.; Central Russian Upland; [1] (Rossman *et al.* 1999)
- Protothelenella croceae* (Bagl. & Carestia) Hafellner & H. Mayrhofer – on *Peltigera aphthosa*; Murmansk Region; [1] (Mayrhofer 1987)
- P. santessonii* H. Mayrhofer – on *Cladonia coccifera*, *C. pocillum*, *C. pyxidata*; Novaya Zemlya, Northern and Southern Urals, Taimyr Peninsula, Putorana Plateau, Altai, Severnaya Zemlya, Sayan Mountains, lower reach of Lena River, Wrangel Island, Chukotka; [15] (Zhurbenko & Hafellner 1999; Zhurbenko & Davydov 2000; Zhurbenko 2004; Zhurbenko & Alstrup 2004)
- Pyrenidium actinellum* Nyl., syn. *Leptosphaeria peltigerea* Vouaux – on *Baeomyces placophyllus*, *Peltigera collina*, *P. elisabethae* Gyeln., *P. rufescens*, *Solorina bispora* Nyl., *S. crocea*; Caucasus, Franz Josef Land, Northern Ural, Taimyr Peninsula, Altai; [10] (Zhurbenko & Santesson 1996; Zhurbenko & Davydov 2000; Zhurbenko 2004; Otte 2004)
- Pyrenochaeta xanthoriae* Diederich – on *Xanthoria parietina* (L.) Th. Fr.; Karelia; [1] (Alstrup *et al.* 2005)
- Raciborskiomyces peltigericola* (D. Hawksw.) M.E. Barr, syn. *Wentiomyces peltigericola* D. Hawksw. – on *Peltigera aphthosa*, *P. didactyla*, *P. rufescens*, *P. scabrosa*; Murmansk Region, Karelia, Komi Republic, Northern Ural, Taimyr Peninsula; [7] (Zhurbenko & Santesson 1996; Zhurbenko 2004; Alstrup *et al.* 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Reconditella physconiarum* Hafellner & Matzer – on *Physconia muscigena*; Northern Ural; [1] (Zhurbenko 2004)
- Refractohilum peltigerae* (Keissl.) D. Hawksw., syn. *Ovularia peltigerae* Keissl. – on *Peltigera canina*, *P. didactyla*, *P. hymenina* (Ach.) Delise; Murmansk Region, Karelia, Tuva; [5] (Zhurbenko & Otnyukova 2001; Zhurbenko & Himelbrant 2002; Alstrup *et al.* 2005; Urbanavichus *et al.* in press)

- Rhagadostoma lichenicola* (De Not.) Keissl. — on *Peltigera* sp., *Solorina crocea* Murmansk Region, Karelia, Northern Ural, Chukotka; [11] (Karatygin *et al.* 1999; Zhurbenko 2001, 2004; Zhurbenko & Ahti 2005)
- **Rhizocarpon aspiciliae* (Räsänen) D. Hawksw. & Atienza, syn. *Phaeocyrtis aspiciliae* Räsänen — on *Porpidia ochrolemma* (Vain.) Brodo & R. Sant.; Karelia; [2] (Räsänen 1939; Hawksworth & Atienza 1994)
- **Rhymboecarpus makarovae* Diederich & Etayo — on *Porpidia* sp.; Chukotka; [2] (Diederich & Etayo 2000)
- R. neglectus** (Vain.) Diederich & Etayo, syn. *Llimoniella neglecta* (Vain.) Triebel & Rambold — on *Lepraria alpina* (de Lesd.) Tretiach & Baruffo, *L. neglecta* (Nyl.) Erichsen; Novaya Zemlya, Northern Ural, Severnaya Zemlya (15 Jul 1996, M.P. Zhurbenko 96 114, LE 207 161), Taimyr Peninsula, Putorana Plateau, Chukotka; [8] (Kümmerling *et al.* 1993; Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko 2004)
- R. pertusariae** Diederich, Zhurb. & Etayo — on *Pertusaria panyrga* (Ach.) A. Massal.; Taimyr Peninsula; [1] (Diederich & Etayo 2000)
- R. stereocaulorum** (Alstrup & D. Hawksw.) Etayo & Diederich, syn. *Geltlingia stereocaulorum* Alstrup & D. Hawksw. — on *Stereocaulon alpinum*, *S. groenlandicum*, *S. rivulorum*; Gydan Peninsula, Severnaya Zemlya, Taimyr Peninsula, New Siberian Islands, Wrangel Island; [9] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Sospelova 2001)
- Roselliniella cladoniae* (Anzi) Matzer & Hafellner, syn. *Adelococcus cladoniae* (Anzi) Keissl. — on *Cladonia pyxidata*; Murmansk Region, Chukotka; [2] (Zhurbenko & Alstrup 2004)
- Rosellinula frustulosae* (Vouaux) R. Sant. — on *Lecanora argopholis*; Karelia, Northern Ural; [2] (Zhurbenko 2004; Alstrup *et al.* 2005)
- **Sagediopsis aspiciliae* (Vain.) Nik. Hoffm. & Hafellner, syn. *Verrucaria aspiciliae* Vain., *Sporophysa aspiciliae* (Vain.) Vain. — on *Aspilidea myrinii* (Fr.) Hafellner; Karelia, Putorana Plateau, Kamchatka Peninsula; [3] (Vainio 1883, 1921; Zhurbenko & Hafellner 1999; Hoffmann & Hafellner 2000)
- S. campsteriana** (Linds.) D. Hawksw. & R. Sant., syn. *Verrucaria tartarina* Nyl., *Sagediopsis tartarina* (Nyl.) Vain. — on *Ochrolechia* cf. *androgya*, *Pertusaria coriacea*; Murmansk Region, Karelia, Taimyr Peninsula, New Siberian Islands; [6] (Vainio 1883, 1921; Zhurbenko & Santesson 1996; Zhurbenko 1998; Urbanavichus *et al.* in press)
- Sclerococcum simplex* D. Hawksw. — on *Pertusaria dactylina*; Northern Ural; [1] (Zhurbenko 2004)
- Scutula epiblastematica* (Wallr.) Rehm, syn. *Peziza epiblastematica* Wallr. — on *Peltigera didactyla*, *P. rufescens*; Karelia, 'Ural' without locality, Northern Ural; [3] (Triebel *et al.* 1997; Zhurbenko 2004; Zhurbenko & Ahti 2005)
- S. epicladonia** (Nyl.) Sacc. — on *Cladonia rangiferina* (L.) F.H. Wigg.; Murmansk Region, Taimyr Peninsula; [2] (Zhurbenko & Santesson 1996; Zhurbenko 2001)
- S. krempelhuberi** Körb., syn. *Lecidea solorinicola* Vain. — on *Solorina saccata*; Murmansk Region, Karelia; [3] (Vainio 1883; Zhurbenko 2001; Zhurbenko & Himelbrant 2002)
- S. miliaris** (Wallr.) Trevis., syn. *Scutula wallrothii* Tul., *Lecidea epigena* Nyl. — on *Peltigera canina*, *P. rufescens*; Murmansk Region, Karelia, Leningrad Region, Chukotka; [18] (Nylander 1865, 1866b; Stizenberger 1876; Vainio 1934, 1940; Räsänen 1939; Triebel *et al.* 1997; Karatygin *et al.* 1999; Zhurbenko & Himelbrant 2002)
- S. stereocaulorum** (Anzi) Körb., syn. *Lecidea stereocaulorum* Th. Fr. — on *Stereocaulon* cf. *alpestre* (Flot.) Domb., *S. alpinum*, *S. botryosum*, *S. capitellatum*, *S. condensatum*, *S. depressum*, *S. glareosum*, *S. groenlandicum*, *S. paschale*, *S. rivulorum*, *S. saxatile*, *S. subcoralloides*, *S. tomentosum*; Murmansk Region, Karelia, Franz Josef Land, Novaya Zemlya, Polar and Northern Urals, Nenets Autonomous Okrug, Gydan Peninsula, Severnaya Zemlya, Izvestii TsIK Islands, Taimyr Peninsula, Putorana Plateau, lower reach of Lena River, New Siberian Islands, Chukotka; [113] (Norrlin 1876; Nylander 1866b, 1887; Vainio 1883, 1909, 1934; Andreev 1994; Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko 2001, 2002b, 2004)
- S. tuberculosa** (Th. Fr.) Rehm — on *Peltigera leucophlebia*; Northern Ural (8 Jul 1997, M.P. Zhurbenko 97 256, LE 210 239); [1]
- Skyttea lecanorae* Diederich & Etayo — on *Lecanora allophana* Nyl., *L. circumborealis*; Baikal Lake Region, Kamchatka Peninsula (8 Aug 2002, D.E. Himelbrant & E.S. Kuznetsova, LE 210 474); [2] (Diederich & Etayo 2000)
- S. tephromelarum** Kalb & Hafellner, syn. *Skyttea elachistophora* (Nyl.) Sherwood & D. Hawksw. — on *Tephromela atra*; Karelia; [1] (Diederich & Etayo 2000)
- Skyttella mulleri* (Willey) D. Hawksw. & R. Sant. — on *Peltigera praetextata*; Karelia; [1] (Alstrup *et al.* 2005; Schiefelbein & Rätzel 2005)
- Sphaerellothecium abditum* Triebel — on *Lecidea* s. str. sp.; Chukotka; [1] (Karatygin *et al.* 1999)
- S. araneosum** (Arnold) Zopf s. str. — on *Arctoparmelia separata* (Th. Fr.) Hale, *Nephroma expallidum* (Nyl.) Nyl., *Ochrolechia* cf. *androgya*, *O. frigida*, including *O. lapuënsis* (Vain.) Räsänen, *O. upsaliensis*, *Stereocaulon apocalypticum* Nyl., *S. depressum*, *S. paschale*, *S. rivulorum*, *S. wrightii* Tuck.; Murmansk Region, Karelia, Franz Josef Land, Taimyr Peninsula, Putorana Plateau, New Siberian

- Islands, Chukotka; [27] (Zhurbenko & Santesson 1996; Zhurbenko 1998, 2001; Karatygin *et al.* 1999; Zhurbenko & Hafellner 1999; Zhurbenko & Himelbrant 2002)
- S. araneosum* (Arnold) Zopf var. *cladoniae* Alstrup & Zhurb., syn. *Sphaerellothecium cladoniae* (Alstrup & Zhurb.) Hafellner – on *Cladonia coccifera*, *C. pocillum*, *C. pyxidata*, *C. symphyrcarpia*; Murmansk Region, Karelia, Franz Josef Land, Novaya Zemlya, Nenets Autonomous Okrug, Northern Ural, Sayan Mountains, Severnaya Zemlya, Taimyr Peninsula, Putorana Plateau, lower reach of Lena River, middle portion of Indigirka River, Wrangel Island, Chukotka; [55] (Zhurbenko & Alstrup 2004)
- S. cladoniicola* E.S. Hansen & Alstrup – on *Cladonia arbuscula*; Chukotka; [1] (Hansen & Alstrup 1995)
- S. conioides* (Nyl.) Cl. Roux & Diederich – on *Baeomyces rufus*; Karelia; [1] (Zhurbenko & Himelbrant 2002)
- S. contextum* Triebel – on *Protoparmelia badia* (Hoffm.) Hafellner; Karelia, Chukotka; [3] (Karatygin *et al.* 1999; Zhurbenko & Himelbrant 2002)
- S. minutum* Hafellner – on *Sphaerophorus fragilis* (L.) Pers., *S. globosus*; Karelia, Franz Josef Land, Northern Ural, Taimyr Peninsula, Putorana Plateau, Altai, lower reach of Kolyma River; [14] (Zhurbenko & Santesson 1996; Zhurbenko 1998, 2004; Zhurbenko & Hafellner 1999; Zhurbenko & Davydov 2000; Zhurbenko & Himelbrant 2002; Zhurbenko *et al.* 2005)
- S. parmeliae* Diederich & Etayo – on *Parmelia sulcata*; Murmansk Region; [1] (Urbanavichene & Urbanavichus 2005)
- S. propinquellum* (Nyl.) Cl. Roux & Triebel, syn. *Pharcidia epicymatica* (Wallr.) Wint. – on *Lecanora carpinea*, *L. rupicola*; Karelia; [2] (Räsänen 1939)
- **S. soechtingii* Zhurb. & Alstrup – on *Arthrorhaphis alpina*; Taimyr Peninsula, Chukotka; [2] (Zhurbenko 2007b)
- Sphinctrina anglica* Nyl. – host not indicated; Komi Republic; [1] (V. Alstrup & J.-O. Hermansson, pers. comm.)
- S. leucopoda* Nyl. – on *Pertusaria* sp.; Amur Region, Primorye Territory; [2] (Urbanavichus & Urbanavichene 2004)
- S. tubiformis* A. Massal. – on *Pertusaria amara* (Ach.) Nyl., *P.* sp.; Leningrad Region, Western Siberian Lowland, Altai; [3] (Roms 1975; Sedel'nikova 1990)
- S. turbinata* (Pers.: Fr.) De Not., syn. *Sphinctrina gelasinata* (With.) Zahlbr. – on *Diploschistes* sp., *Pertusaria albescens*, *P. alpina*, *P. amara*, *P. coriacea*, *P. hemisphaerica* (Flörke) Erichsen, *P. hymenea* (Ach.) Schaer., *P. pertusa* (Weigel) Tuck., *P. sommerfeltii* (Flörke ex Sommerf.) Fr., *Pertusaria* sp.; Caucasus, middle portion of Volga basin, Komi Republic, Polar, Northern and Middle Urals, Western Siberian Lowland, 'Asian Arctic' (?) without locality, Altai, Sayan Mountains, Baikal Lake Region, Amur Region, Primorye Territory, Kuril Islands, Kamchatka Peninsula; [>21] (Vainio 1928; Roms 1975; Titov 1990; Bredkina *et al.* 1992; Ryabkova 1998; Urbanavichene & Urbanavichus 1999; Sedel'nikova 2001a, b; Chabanenko 2002; Voronjuk & Makryi 2002; Otte 2004; Titov *et al.* 2004; Urbanavichus & Urbanavichene 2005a; Hermansson *et al.* 2006; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Stigmatidium cerinae* Cl. Roux & Triebel – on *Caloplaca cerina*; Northern Ural, Taimyr Peninsula; [3] (Zhurbenko & Santesson 1996; Zhurbenko 2004)
- S. congestum* (Körb.) Triebel – on *Lecanora* sp.; Baikal Lake Region (4 Jul 1996, G.P. Urbanavichus, LE 207 228); [1]
- S. conspurcans* (Th. Fr.) Triebel & R. Sant. – on *Psora rubiformis* (Ach.) Hook.; Murmansk Region, Franz Josef Land, Novaya Zemlya, Taimyr Peninsula, Putorana Plateau; [21] (Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko 2001)
- S. ephebes* (Henssen) D. Hawksw., syn. *Pharcidia ephebes* Henssen – on *Ephebe lanata* (L.) Vain.; Leningrad Region, Karelia; [2] (Henssen 1963; Alstrup & Ahti 2007)
- S. frigidum* (Sacc.) Alstrup & D. Hawksw. – on *Thamnolia vermicularis*; Franz Josef Land, Severnaya Zemlya, Vize Island, Taimyr Peninsula, New Siberian Islands; [18] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999; Zhurbenko & Pospelova 2001)
- S. gyrophorarum* (Arnold) D. Hawksw., syn. *Endococcus gyrophorarum* (Arnold) J.C. David & D. Hawksw. – on *Umbilicaria decussata* (Vill.) Zahlbr.; Taimyr Peninsula; [2] (Zhurbenko & Santesson 1996)
- S. haesitans* (Nyl.) Hafellner – on *Protothelanellassphinctrinoides*; Murmansk Region; [1] (Kihlman 1891)
- S. microcarpum* Alstrup & J.C. David – on *Flavocetraria cucullata*, *Vulpicida tilesii* (Ach.) J.-E. Mattsson & M.J. Lai; Karelia, Polar Ural, lower reach of Lena River; [3] (Zhurbenko 2002a, b; Alstrup *et al.* 2005)
- S. peltideae* (Vain.) R. Sant., syn. *Pharcidia peltideae* Vain. – on *Peltigera aphthosa*, *P. canina*, *P. elisabethae*, *P. leucophlebia*, *P. rufescens*, *P. venosa* (L.) Hoffm.; Karelia, Franz Josef Land, Northern Ural, Taimyr Peninsula, Altai, lower reach of Kolyma River, Chukotka; [19] (Zhurbenko & Santesson 1996; Zhurbenko 1998, 2004; Karatygin *et al.* 1999; Zhurbenko & Davydov 2000; Zhurbenko & Himelbrant 2002; Alstrup 2004; Zhurbenko *et al.* 2005)
- S. pseudopeltideae* Cl. Roux & Triebel – on *Peltigera venosa*; Altai; [1] (Zhurbenko & Davydov 2000)
- S. pumilum* (Lettau) Matzer & Hafellner – on *Physcia caesia*; Karelia, Polar and Northern Urals; [5] (Zhurbenko 2002b, 2004; Zhurbenko & Himelbrant 2002; Alstrup *et al.* 2005)
- S. rivulorum* (Kernstock) Cl. Roux & Nav.-Ros. – on *Verrucaria* sp.; Putorana Plateau; [1] (Zhurbenko & Hafellner 1999)
- S. schaeereri* (A. Massal.) Trevis. s. str. – on *Dacampia hookeri* (Borrer) A. Massal.; Taimyr Peninsula, Chukotka; [2] (Zhurbenko & Santesson 1996; Karatygin *et al.* 1999)
- S. solorinarium* (Vain.) D. Hawksw. – on *Solorina saccata*, *S. spongiosa*; Murmansk Region, Karelia, Leningrad Region (25 Jun 1955, A. Henssen 510, H ?), Northern Ural, Taimyr Peninsula, Chukotka; [7] (Zhurbenko &

- Santesson 1996; Karatygin *et al.* 1999; Zhurbenko 2001, 2004; Zhurbenko & Himelbrant 2002)
- S. vezdae* Matzer – on '*Bacidia colchica* Vězda; Caucasus; [2] (Matzer 1996)
- Syzygospora bachmannii* Diederich & M.S. Christ. – on *Cladonia cornuta* (L.) Hoffm., *C. gracilis*; Murmansk Region (Pechenga, V. Räsänen, H), Karelia, Leningrad Region; [5] (Zhurbenko & Ahti 2005; Alstrup & Ahti 2007)
- S. physciacearum* Diederich – on *Physcia stellaris*; Karelia, Komi Republic; [2] (Alstrup *et al.* 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- Taeniolella beschiana* Diederich – on *Cladonia coccifera*, *C. pleurota* (Flörke) Schaer., *C. pocillum*, *C. pyxidata*, *C. stricta* (Nyl.) Nyl., *C. symphyocarpia*; Murmansk Region, Karelia, Franz Josef Land, Tuva, Taimyr Peninsula, Wrangel Island; [8] (Zhurbenko & Santesson 1996; Zhurbenko 1998, 2001; Zhurbenko & Otnyukova 2001; Zhurbenko & Himelbrant 2002; Zhurbenko & Alstrup 2004)
- T. delicata* M.S. Christ. & D. Hawksw. – on *Lecanora argentata* (Ach.) Malme; Karelia; [1] (Alstrup *et al.* 2005)
- T. pertusariicola* D. Hawksw. & H. Mayrhofer – on *Pertusaria alpina*, *P. bryontha* (Ach.) Nyl., *P. carneopallida* (Nyl.) Anzi; Taimyr Peninsula, Altai, lower reach of Kolyma River; [3] (Zhurbenko 1998; Zhurbenko & Davydov 2000; Zhurbenko *et al.* 2005)
- T. punctata* M.S. Christ. & D. Hawksw. – on *Graphis scripta* (L.) Ach.; Caucasus; [1] (Otte 2004)
- **T. rolfii* Diederich & Zhurb. – on *Cetraria aculeata* (Schreb.) Fr., *C. islandica* (L.) Ach., *C. muricata* (Ach.) Eckfeldt, *C. nigricans* Nyl., *C. odontella* (Ach.) Ach., *Cetrariella delisei* (Schaer.) Kärnefelt & A. Thell; Murmansk Region, Nenets Autonomous Okrug, Novaya Zemlya, Severnaya Zemlya, Izvestii TsIK Islands, middle portion of Yenisey River, lower reach of Lena River; [11] (Diederich & Zhurbenko 1997; Zhurbenko 2001; Diederich & Zhurbenko 2001)
- Tephromela koliensis* (Räsänen) Rambold & Triebel, syn. *Nesolechia koliensis* Räsänen – on *Lecanora argopholis*; Karelia; [2] (Rambold 1993; Hawksworth & Atienza 1994)
- Tetramelas phaeophysciae* A. Nordin & Tibell – on *Phaeophyscia sciastra* (Ach.) Moberg; Putorana Plateau (as '*Buellia pulverulenta* (Anzi) Jatta'); the species can be considered as scarcely lichenized; [1] (Zhurbenko & Hafellner 1999)
- T. pulverulentus* (Anzi) A. Nordin & Tibell, syn. *Buellia pulverulenta* (Anzi) Jatta – on *Physcia caesia*, *Physconia muscigena*; Polar Ural, Severnaya Zemlya, Taimyr Peninsula (29 Jul, 3 Aug 1994, M.P. Zhurbenko 9493a, 94 139, 94 257, LE 206 969a, 206 968, 206 970), New Siberian Islands, Wrangel Island; the species is now considered as a poorly lichenized, obligately lichenicolous endoparasitic lichen (Hafellner & Poelt 1980); [8] (Nordin 2000; Zhurbenko 2002b; Kholod & Zhurbenko 2005; Zhurbenko & Matveeva 2006)
- Toninia plumbina* (Anzi) Hafellner & Timdal – on *Degelia plumbea* (Lightf.) P.M. Jørg. & P. James; Caucasus; [1] (Bredkina *et al.* 2003)
- Tremella cetrariicola* Diederich & Coppins – on *Cetrariella delisei*, *Tuckermannopsis chlorophylla* (Willd.) Hale; Murmansk Region, Komi Republic; [3] (Urbanavichus *et al.* in press; V. Alstrup & J.-O. Hermansson, pers. comm.)
- T. cladoniae* Diederich & M. S. Christ. – on *Cladonia coniocraea* (Flörke) Spreng.; Komi Republic; [1] (V. Alstrup & J.-O. Hermansson, pers. comm.)
- T. hypogymniae* Diederich & M.S. Christ. – on *Hypogymnia physodes*; Karelia (as *Tremella lichenicola* Diederich), Komi Republic, Altai; [4] (Zhurbenko & Davydov 2000; Alstrup *et al.* 2005; V. Alstrup & J.-O. Hermansson, pers. comm.)
- T. lobariacearum* Diederich & M.S. Christ. – on *Lobaria isidiota*; Primorye Territory; [1] (Diederich 1996)
- T. nephromatis* Diederich – on *Nephroma parile* (Ach.) Ach.; Northern Ural; [1] (Zhurbenko 2004)
- Trichonectria anisospora* (Lowen) van den Boom & Diederich, syn. *Pronectria anisospora* (Lowen) Lowen – on *Hypogymnia physodes*; Karelia; [1] (Alstrup *et al.* 2005)
- Unguiculariopsis groenlandiae* (Alstrup & D. Hawksw.) Etayo & Diederich, syn. *Llimoniella groenlandiae* (Alstrup & D. Hawksw.) Triebel & Hafellner – on *Lepraria gelida* Tønsberg & Zhurb. (as '*Leprocaulon subalbicans* (I.M. Lamb) I.M. Lamb & A.M. Ward.');
- Severnaya Zemlya; [1] (Karatygin *et al.* 1999)
- U. refractiva* (Coppins) Coppins – on *Mycobilimbia cf. lobulata*; Severnaya Zemlya; [1] (Diederich & Etayo 2000)
- Vouauxiomyces truncatus* (de Lesd.) Dyko & D. Hawksw., syn. *Phoma truncata* de Lesd. – on *Flavoparmelia caperata* (L.) Hale; Caucasus; [1] (Otte 2004)
- Weddellomyces tartaricola* (Linds.) Alstrup & D. Hawksw., syn. *Verrucaria tartaricola* Linds. – on *Ochrolechia cf. frigida*; Murmansk Region, Franz Josef Land; [3] (Zhurbenko & Santesson 1996; Zhurbenko 2001)
- Zwackhiomyces berengerianus* (Arnold) Grube & Triebel – on *Biatora* sp., *Mycobilimbia berengeriana* (A. Massal.) Hafellner & V. Wirth, *M. carnealbida*, *M. pilularis* (Körb.) Hafellner & Türk; Northern Ural, Taimyr Peninsula, Putorana Plateau; [5] (Zhurbenko & Santesson 1996; Zhurbenko & Hafellner 1999; Zhurbenko 2004)
- Z. cladoniae* (C.W. Dodge) Diederich – on *Cladonia squamosa* Hoffm.; Karelia; [1] (Alstrup *et al.* 2005)

- Z. dispersus* (Körb.) Triebel & Grube – on *Lecanora rupicola*, *L. swartzii* (Ach.) Ach., *Protoblastenia terricola* (Anzi) Lyngé; Karelia, Taimyr Peninsula; [3] (Räsänen 1939; Zhurbenko & Santesson 1996)
- Z. martinianus* (Arnold) Triebel & Grube, syn. *Arthopyrenia martiniana* Arnold – on *Porpidia crustulata* (Ach.) Hertel & Knoph; Baikal Lake Region (25 Jul 1996, G.P. Urbanavichus, LE 207 356); [1]

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