

A checklist of polypores from Northeast China

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This paper summarizes the polypores (Basidiomycota) recorded during the investigations made by the author in 1993–1999 in northeastern China. The study is based on ca. 2500 specimens collected, but additional data was obtained from the critical re-examination of the previously collected herbarium material. Altogether 261 polypore species were recorded from the study area and are listed here. Fifteen species are new to China. In addition, nine species found in the Russian Far East are included. The checklist provides a taxonomically sound basis for future studies on poroid wood-inhabiting fungi in the area. Taxonomy of some noteworthy species is outlined, and the following new combinations are proposed: *Inocutis levis* (P. Karst.) Y.C. Dai, *Inonotopsis exilispora* (Y.C. Dai & Niemelä) Y.C. Dai, and *Trichaptum polycystidium* (Pilát) Y.C. Dai.

Key words: Basidiomycota, checklist, Northeast China, polypores, taxonomy

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Introduction

The checklist of polypores from Changbai was published in 1996 (Dai 1996), and species in the paper were found from the Changbai Mountain Range only, which is located mostly in Jilin Province. After this publication, three additional field trips were made in Jilin and other provinces of NE China, and the number of species has rapidly increased from these trips. It is therefore necessary to compile a more complete list of polypores from the whole of Northeast China. In the previous reports (Dai 1996, 1997, 1998; Langer & Dai 1998) 10 species were described from the study area.

Material and methods

In the present study the polypores recorded in the provinces of Heilongjiang, Jilin, Liaoning, and the eastern Inner Mongolia Autonomous Region are listed. The field work was carried out by the author in 1993–1999, and the data derive from both forest reserves and unprotected managed forests. In addition, the species found in the Beijing area were included. Altogether, nearly 2 500

specimens were collected during the field trips. Additional data was obtained by critical re-examination of the previously collected material in the herbaria HMAS (Beijing, China), HBNU (Changchun, China), IFP (Shenyang, China), NEFI (Harbin, China), and O (Oslo, Norway). However, species reported from NE China (Tai 1979, Li 1991, Pan 1995) without voucher specimens were excluded from the present study.

Nearly 200 specimens, collected from the Russian Far East (deposited in TAA, Tartu, Estonia), were examined, and most of the species from this material were also found from the Chinese side of the border. Although some species have not yet been recorded in NE China, they are included here.

Results and discussion

A total of 261 species were recorded. Fifteen species are new to China. In addition, 7 species belonging to *Antrodia* P. Karst., *Antrodiella* Ryvarden & Johans., *Ceriporiopsis* Domański, *Junghuhnia* Corda. emend. Ryvarden, *Postia* P. Karst., and *Spongipellis* Pat., were collected but

no existing names could be found for them. These species were excluded from the present paper, and they will be described later in forthcoming publications. The present checklist provides a taxonomically sound basis for future studies on poroid wood-inhabiting fungi in the area. In the following the polypores newly reported from China are in **bold**, and the species found in the Russian Far East but not yet in NE China are marked with an asterisk (*). A few species were treated collectively, and they are indicated with *sensu lato*. The definition of polypores in this paper is used in broad sense, and so includes the Polyporaceae, Ganodermataceae, and poroid species of the Hymenochaetaceae, Corticiaceae and Tremellaceae. Some species were identified preliminarily and indicated with "cf.", because the Chinese collections are not totally identical to the authentic material of these species, or they do not completely fit these species as they were described, or the Chinese material is not in good condition. The author abbreviations of scientific names follow Kirk and Ansell (1992), except for evident misspellings.

Checklist

- **Abortiporus biennis* (Bull.) Singer
Amylocystis lapponica (Romell) Singer
Anomoporia albolutescens (Romell) Pouzar
Anomoporia bombycina (Fr.) Pouzar
Anomoporia flavissima Niemelä
Anomoporia myceliosa (Peck) Pouzar
Anomoporia vesiculosa Y.C. Dai & Niemelä
Antrodia cf. *albida* (Fr. : Fr.) Donk
Antrodia cf. *albobrunnea* (Romell) Ryvar den
Antrodia carbonica (Overh.) Ryvar den & Gilb.
Antrodia crassa (P. Karst.) Ryvar den
Antrodia gossypina (Speg.) Ryvar den
Antrodia heteromorpha (Fr. : Fr.) Donk
Antrodia infirma Renvall & Niemelä
Antrodia cf. *macra* (Sommerf.) Niemelä
Antrodia macrospora Bernic. & De Dom.
Antrodia malicola (Berk. & M.A. Curtis) Donk
Antrodia primaeva Renvall & Niemelä
Antrodia pulvinascens (Pilát) Niemelä
Antrodia serialis (Fr.) Donk
Antrodia cf. *sinuosa* (Romell) P. Karst.
* *Antrodia sitchensis* (Baxter) Gilb. & Ryvar den
Antrodia vaillantii (DC. : Fr.) Ryvar den
Antrodia variiformis (Peck) Donk
Antrodia xantha (Fr. : Fr.) Ryvar den
Antrodiella albocinnamomea Y.C. Dai & Niemelä
Antrodiella americana Ryvar den & Gilb.
Antrodiella citrinella Niemelä & Ryvar den
Antrodiella gypsea (Yasuda) T. Hattori & Ryvar den
Antrodiella pallasii Renvall, Johannesson & Stenlid
Antrodiella romellii (Donk) Niemelä *sensu lato*
Antrodiella semisupina (Berk. & M.A. Curtis) Ryvar den *sensu lato*
Antrodiella ussurii Y.C. Dai & Niemelä
Aurantiporus fissilis (Berk. & M.A. Curtis) H. Jahn
Auriporia aurea (Peck) Ryvar den
Bjerkandera adusta (Willd. : Fr.) P. Karst.
Bjerkandera fumosa (Pers. : Fr.) P. Karst.
**Bondarzewia montana* (Quél.) Singer
Castanoporus castaneus (Lloyd) Ryvar den
Ceriporia alachuana (Murrill) Hallenb.
Ceriporia excelsa (S. Lundell) Parmasto
Ceriporia purpurea (Fr.) Donk
Ceriporia cf. *spissa* (Schwein. : Fr.) Rajchenb.
Ceriporia tarda (Berk.) Ginns
Ceriporia viridans (Berk. & Broome) Donk
Ceriporiopsis aneirina (Sommerf. : Fr.) Domański
Ceriporiopsis cf. *balaenae* Niemelä
**Ceriporiopsis cremea* (Parmasto) Ryvar den
Ceriporiopsis gilvescens (Bres.) Domański
Ceriporiopsis mucida (Pers. : Fr.) Gilb. & Ryvar den
Ceriporiopsis resinascens (Romell) Domański
Cerrena unicolor (Bull. : Fr.) Murrill
Chaetoporellus latitans (Bourdot & Galzin) Singer
Climacocystis cf. *borealis* (Fr.) Kotl. & Pouzar
Coltricia perennis (L. : Fr.) Murrill
Cryptoporus volvatus (Peck) Shear
Cyclomyces xeranticus (Berk.) Y.C. Dai & Niemelä
Daedalea dickinsii Yasuda
Daedaleopsis confragosa (Bolton : Fr.) J. Schroet.
Daedaleopsis sinensis (Lloyd) Y.C. Dai
Daedaleopsis tricolor (Bull. : Mérat) Bondartsev & Singer
Datronia mollis (Sommerf.) Donk
Datronia scutellata (Schwein.) Gilb. & Ryvar den
Datronia stereoides (Fr.) Ryvar den
Dichomitus campestris (Quél.) Domański & Orlicz
Dichomitus squalens (P. Karst.) D.A. Reid

- Diplomitoporus flavescens* (Bres.) Domański
Diplomitoporus lindbladii (Berk.) Gilb. & Ryvar-
 den
Donkioporia expansa (Desm.) Kotl. & Pouzar
Elmerina holophaea (Pat.) Parmasto
Fomes fomentarius (L. : Fr.) Fr.
Fomitiporia hartigii (Allesch. & Schnabl) Fias-
 son & Niemelä
Fomitiporia punctata (P. Karst.) Murrill
Fomitiporia robusta (P. Karst.) Fiasson &
 Niemelä
Fomitopsis cajanderi (P. Karst.) Kotl. & Pouzar
Fomitopsis cf. meliae (Underw.) Gilb. & Ryvar-
 den
Fomitopsis officinalis (Vill. : Fr.) Bondartsev &
 Singer
Fomitopsis pinicola (Sw. : Fr.) P. Karst.
Fomitopsis rhodophaea (Lév.) Imazeki
Fomitopsis rosea (Alb. & Schwein. : Fr.) P. Karst.
Funalia cervina (Schwein. : Fr.) Y.C. Dai
Funalia trogii (Berk.) Bondartsev & Singer
Ganoderma lipsiense (Batsch) G.F. Atk.
Ganoderma lucidum (W. Curtis. : Fr.) P. Karst.
Ganoderma subumbraculum Imazeki
Ganoderma tsugae Murrill
Gelatoporia pannocincta (Romell) Niemelä
Gloeophyllum abietinum (Bull. : Fr.) P. Karst.
Gloeophyllum carbonarium (Berk. & M.A. Cur-
 tis) Ryvar-
 den
Gloeophyllum odoratum (Wulfen : Fr.) Imazeki
 * *Gloeophyllum protractum* (Fr.) Imazeki
Gloeophyllum sepiarium (Wulfen : Fr.) P. Karst.
Gloeophyllum traheum (Pers. : Fr.) Murrill
Gloeoporus dichrous (Fr. : Fr.) Bres.
Grifola frondosa (Dicks. : Fr.) Gray
Hapalopilus croceus (Pers. : Fr.) Bondartsev &
 Singer
Hapalopilus rutilans (Pers. : Fr.) P. Karst.
Haploporus odoratus (Sommerf.) Bondartsev &
 Singer
Heterobasidion insulare (Murrill) Ryvar-
 den
Heterobasidion parviporum Niemelä & Korho-
 nen
Hexagonia apiaria Pers. : Fr.
Hyphodontia syringae E. Langer
Inocutis rheades (Pers.) Fiasson & Niemelä
Inocutis tamaricis (Pat.) Fiasson & Niemelä
Inonotopsis exilispora (Y.C. Dai & Niemelä) Y.C.
 Dai
Inonotopsis subiculosa (Peck) Parmasto
Inonotus andersonii (Wll. & Everh.) Cerny
Inonotus hispidus (Bull. : Fr.) P. Karst.
- Inonotus obliquus* (Pers. : Fr.) Pilát
Inonotus pruinosus Bondartsev
Inonotus radiatus (Sowerby : Fr.) P. Karst
Irpex lacteus (Fr. : Fr.) Fr. *sensu lato*
Ischnoderma benzoinum (Wahlenb. : Fr.) P.
 Karst.
Ischnoderma resinosum (Fr.) P. Karst.
Jahnoporus hirtus (Cooke) Nuss
Junghuhnia collabens (Fr.) Ryvar-
 den
Junghuhnia fimbriatella (Peck) Ryvar-
 den
Junghuhnia nitida (Pers. : Fr.) Ryvar-
 den
Junghuhnia pseudoziligiana (Parmasto) Ryvar-
 den
Laetiporus sulphureus (Bull. : Fr.) Murrill
Lenzites acutus Berk.
Lenzites betulinus (L. : Fr.) Fr.
Leucophellinus irpicoides (Pilát) Bondartsev &
 Singer
Loweporus pubertatis (Lloyd) T. Hattori
 **Megasporoporia cf. setulosa* (Henn.) Raj-
 chenb.
Melanoporia castanea (Yasuda) T. Hattori &
 Ryvar-
 den
Meripilus giganteus (Pers. : Fr.) P. Karst.
Microporus cf. subaffinis (Lloyd) Imazeki
Nigroporus ussuriensis (Bondartsev & Ljub.)
 Y.C. Dai & Niemelä
Oligoporus balsameus (Peck) Gilb. & Ryvar-
 den
Oligoporus cf. floriformis (Quél. ex Bres.) Gilb. &
 Ryvar-
 den
Oligoporus lowei (Pilát) Gilb. & Ryvar-
 den
Oligoporus obductus (Berk.) Gilb. & Ryvar-
 den
Oligoporus rennyi (Berk. & Broome) Donk
Oligoporus sericeomollis (Romell) Bondartseva
Onnia leporina (Fr.) H. Jahn
Onnia tomentosa (Fr.) P. Karst.
Onnia triquetra (Lenz) Imazeki
Oxyporus bucholtzii (Bondartsev & Ljub.) Y.C.
 Dai & Niemelä
Oxyporus corticola (Fr.) Ryvar-
 den
Oxyporus cf. latemarginatus (Dur. & Mont. ex
 Mont.) Donk
Oxyporus obducens (Pers. : Fr.) Donk
Oxyporus populinus (Schumach. : Fr.) Donk
Oxyporus sinensis X.L. Zeng
Parmastomyces mollissimus (Maire) Pouzar
Parmastomyces taxi (Bondartsev) Y.C. Dai &
 Niemelä
Perenniporia fraxinea (Bull. : Fr.) Ryvar-
 den
Perenniporia japonica (Yasuda) T. Hattori &
 Ryvar-
 den
Perenniporia cf. fergusii Gilb. & Ryvar-
 den

- Perenniporia maackiae* (Bondartsev & Ljub.) Parmasto
Perenniporia medulla-panis (Jacq. : Fr.) Donk
Perenniporia narymica (Pilát) Pouzar
Perenniporia ochroleuca (Berk.) Ryvarden
Perenniporia robiniophila (Murrill) Ryvarden
Perenniporia subacida (Peck) Donk
Perenniporia tenuis (Schw.) Ryvarden var. *tenuis*
Perenniporia truncatospora (Lloyd) Ryvarden
Phaeolus schweinitzii (Fr. : Fr.) Pat.
Phellinidium aciferum Y.C. Dai
Phellinidium ferrugineofuscum (P. Karst.) Fias-son & Niemelä
Phellinidium sulphurascens (Pilát) Y.C. Dai
Phellinus baumii Pilát
Phellinus chinensis Pilát
Phellinus conchatus (Pers. : Fr.) Quél.
Phellinus ferreus (Pers.) Bourdot & Galzin
Phellinus ferruginosus (Schrad. : Fr.) Pat.
Phellinus cf. gilvoides (Lloyd) Imazeki
Phellinus gilvus (Schwein. : Fr.) Pat.
Phellinus igniarius (L. : Fr.) Quél. *sensu lato*
Phellinus cf. laevigatus (P. Karst.) Bourdot & Galzin
Phellinus cf. laricis (Jaczewski in Pilát) Pilát
Phellinus lundellii Niemelä
Phellinus nigrolimitatus (Romell) Bourdot & Galzin
Phellinus cf. pini (Brot. : Fr.) A. Ames
Phellinus tremulae (Bondartsev) Bondartsev & Borisov
Phellinus tuberculosus (Baumg.) Niemelä
Phellinus vaninii Ljub.
Phellinus viticola (Schwein. : Fr.) Donk
Phellinus yamanoi (Imazeki) Parmasto
Phylloporia ribis (Schumach. : Fr.) Ryvarden
Physisporinus rivulosus (Berk. & M.A. Curtis) Ryvarden
Physisporinus sanguinolentus (Alb. & Schwein. : Fr.) Pilát
Physisporinus vitreus (Pers. : Fr.) P. Karst.
Physisporinus xylostromatoides (Bres.) Y.C. Dai
Piptoporus betulinus (Bull. : Fr.) P. Karst.
Piptoporus quercinus (Schrad.) Pilát
Piptoporus soloniensis (Dubois : Fr.) Pilát
Polyporus admirabilis Peck
Polyporus arcularius Batsch : Fr.
Polyporus badius (Pers. : Gray) Schwein.
Polyporus brumalis Pers. : Fr.
Polyporus ciliatus Fr. : Fr.
Polyporus hemicapnodes Berk. & Broome
Polyporus mongolicus (Pilát) Y.C. Dai
Polyporus mori (Pollini : Fr.) Fr.
Polyporus pekingensis J.D. Zhao & L.W. Xu
**Polyporus pseudobetulinus* (Pilát) Thorn, Kottir. & Niemelä
Polyporus squamosus (Huds. : Fr.) Fr.
Polyporus tubaeformis (P. Karst.) Ryvarden & Gilb.
Polyporus tuberaster Jacq. : Fr.
**Polyporus vassilievae* Thorn
Polyporus varius Pers. : Fr.
Poriodontia subvinosa Parmasto
Postia caesia (Schrad. : Fr.) P. Karst.
Postia fragilis (Fr. : Fr.) Jülich
Postia guttulata (Peck) Jülich
Postia lactea (Fr. : Fr.) P. Karst.
Postia leucomallella (Murrill) Jülich
Postia pileata (Parmasto) Y.C. Dai & Renvall
Postia placenta (Fr.) M.J. Larsen & Lombard
Postia cf. rancida (Bres.) M.J. Larsen & Lombard
Postia simanii (Pilát) Jülich
Postia stiptica (Pers. : Fr.) Jülich
Postia cf. subcaesia (A. David) Jülich
Postia undosa (Peck) Jülich
Pouzaroporia subrufa (Ellis & Dearn.) Vampola
Protomerulius caryae (Schwein.) Ryvarden
Pycnoporellus fulgens (Fr.) Donk
Pycnoporus cinnabarius (Jacq. : Fr.) P. Karst.
Pycnoporus sanguineus (L. : Fr.) Murrill
Pyrrhoderma scaura (Lloyd) Ryvarden
Rigidoporus crocatus (Pat.) Ryvarden
Rigidoporus eminens Y.C. Dai
Schizopora cystidiata A.D. David & Rajchenb.
Schizopora flavipora (Cooke) Ryvarden
Schizopora paradoxa (Schrad. : Fr.) Donk
Schizopora radula (Pers. : Fr.) Hallenb.
Skeletocutis amorphia (Fr. : Fr.) Kotl. & Pouzar
Skeletocutis biguttulata (Romell) Niemelä
Skeletocutis brevispora Niemelä
Skeletocutis carneogrisea A. David
Skeletocutis kuehneri A. David
Skeletocutis lenis (P. Karst.) Niemelä
Skeletocutis nivea (Jungh.) Jean Keller
Skeletocutis ochroalba Niemelä
Skeletocutis odora (Sacc.) Ginns
Skeletocutis perennis Ryvarden
Skeletocutis stellae (Pilát) Jean Keller
Skeletocutis subvulgaris Y.C. Dai
Skeletocutis vulgaris (Fr.) Niemelä & Y.C. Dai
Spongipellis delectans (Peck) Murrill
Spongipellis spumeus (Sowerby : Fr.) Pat.
Stromatoscypha fimbriata (Pers. : Fr.) Donk
Trametes conchifer (Schwein. : Fr.) Pilát
Trametes gibbosa (Pers. : Fr.) Fr.

Trametes hirsuta (Wulfen : Fr.) Pilát
 **Trametes ljubarskyi* Pilát
Trametes ochracea (Pers.) Gilb. & Ryvarden
Trametes pubescens (Schumach. : Fr.) Pilát
Trametes suaveolens (Fr. : Fr.) Fr.
Trametes velutina (Fr. : Fr.) G. Cunn.
Trametes versicolor (L. : Fr.) Pilát
Trechispora candidissima (Schwein.) Bondartsev & Singer
Trechispora hymenocystis (Berk. & Broome) K.H. Larsson
Trechispora mollusca (Pers. : Fr.) Libertá
Trichaptum abietinum (Pers. : Fr.) Ryvarden
Trichaptum fuscoviolaceum (Ehrenb. : Fr.) Ryvarden
Trichaptum laricinum (P. Karst.) Ryvarden
Trichaptum pargamenum (Fr.) G. Cunn.
Trichaptum cf. perrottetii (Lév.) Ryvarden
Trichaptum polycystidiatum (Pilát) Y.C. Dai
Tyromyces chioneus (Fr.) P. Karst.
Tyromyces cf. sibiricus Penzina & Ryvarden
Wolfiporia dilatohyppha Ryvarden & Gilb.
Wolfiporia curvispora Y.C. Dai
Wrightoporia avellanea (Bres.) Pouzar
Wrightoporia lenta (Oveh. & J. Lowe) Pouzar
Wrightoporia rubella Y. C. Dai

Notes on selected species

Antrodia macrospora was reported from Italy only (Bernicchia 1990). Several specimens were collected on *Quercus mongolica* from NE China but because most of them were sterile, this taxon was not reported before. However, in 1998 fertile material was collected, and it proved to be identical to *Antrodia macrospora*. The spores in the Chinese material are $12\text{--}14 \times 4\text{--}5.5 \mu\text{m}$, which are slightly smaller than those in the Italian material of *A. macrospora* ($12\text{--}18 \times 3.5\text{--}6 \mu\text{m}$).

Antrodiella pallasii was recently described from North Europe (Johannesson et al. 2000). It often grows on fallen trunks of *Picea*, which had previously been decayed by *Trichaptum* spp. One Chinese specimen was treated as *A. romellii* (Dai 1996), but it inhabits in rotten wood of *Picea* which was evidently decomposed by *Trichaptum* sp. Its pore surface is pale yellowish, and its spores are broadly ellipsoid, $(2.7\text{--})2.9\text{--}3.3$ (-3.7) \times $(1.8\text{--})1.9\text{--}2.1$ (-2.2) μm ($n=30/1$). The Chinese material has slightly shorter spores, but is otherwise identical to the collections of *A. pallasii* from Finnish Lapland.

Antrodiella romellii sensu lato: The Chinese material is certainly not *Antrodiella romellii* as this name used in Europe. It grows together with a species of *Phellinus* Quél. on rotten wood of poplar. Its pore surface is pale yellowish, so it is therefore somewhat similar to that of *A. pallasii*, but its spores are broadly ellipsoid, and they are closer to *A. romellii*. In addition, the hyphae at bottom of tubes are amyloid in the Chinese collection, and this character has not been found in any species of *Antrodiella*.

Heterobasidion parviporum was recently separated from *H. annosum* (Fr.) Bref. *sensu lato* (Niemelä & Korhonen 1998), and it represents the well known S type of *H. annosum*. The Chinese isolates are completely interfertile with European isolations of S type, but totally intersterile with stocks of P type, which mainly grows on *Pinus* (Dai & Korhonen 1999). The P type in Europe is *H. annosum sensu stricto*. In addition, the mating frequency of Chinese stocks (*H. parviporum*) with the European F group is up to 94%, but these matings were usually unilateral. The F group, which is distributed in southern Europe, was recently described as *H. abietinum* (Niemelä & Korhonen 1998).

Hexagonia apiaria has been widely reported from tropical Asia (Corner 1987, Zhao & Zhang 1992, Quanten 1997). The collection from Jilin Province is so far the northernmost record of this species. The large and hexagonal pores (2–4 per cm) distinguish the species.

Phellinus cf. gilvoides: Several specimens collected on angiosperms are treated here under *Phellinus cf. gilvoides*. This taxon is similar to *P. viticola*, but the latter species usually grows on gymnosperms, and it has fairly large pores (4–5 per mm vs. 5–7 per mm in *P. cf. gilvoides*). My material of *P. cf. gilvoides* is mostly sterile, and spores were found in a single collection. The spores are hyaline, thin-walled, and cylindrical, $5.5\text{--}6.5 \times 1.7\text{--}2.2 \mu\text{m}$, so they are different from the allantoid spores of *P. viticola*. *P. gilvoides* was described from Florida, USA, and Ryvarden (1992) considered it to be *P. viticola*. However, the spores in the type material were reported to be hyaline to pale yellowish brown, $7.7\text{--}8.5 \times 3.5\text{--}4.5 \mu\text{m}$ (Larsen & Cobb-Pouille 1990).

Phellinus cf. gilvoides is distributed in Japan, too. Hattori (pers. comm.) has made an intensive study on it, and he will soon describe it as a new species.

Polyporus pekingensis was originally described from Beijing area (Zhao *et al.* 1982). Its holotype (HMAS 19416) was studied. It is composed by several connected pilei, and forms a large funnel-shaped and rosetiform fruit body. It is evidently fully grown basidiocarp, but its hyphal system is distinctly monomitic, and the hyphae are acyanophilous. So it does not belong to the genus *Polyporus* P. Micheli ex Adans.: Fr. *sensu stricto*. Its new combination and detailed description will be given in a later publication.

Skeletocutis brevispora was described from the boreal forest of North Europe (Niemelä 1998), and it grows in rich, dense and old-growth spruce forest. *Skeletocutis brevispora* usually inhabits the wood decayed by *Phellinidium ferrugineofuscum*. The cylindrical spores with a distinct tapering apiculus are the best characters for recognizing this species in the microscope. The single Chinese specimen was collected from a fallen trunk of spruce in virgin forest of Changbaishan Nature Reserve, and its ecology in NE China is very similar to that in Europe.

Skeletocutis ochroalba: The Chinese collection is the second record of this species after its description from North Canada (Niemelä 1985). It grows on fallen trunks of *Picea* in virgin forests, and seems to be a very rare species. *Skeletocutis ochroalba* is very similar to *S. nivea* in the microscope, but the latter species has abundant encrustations on its hyphae at dissepiment edges, and it usually grows on angiosperms.

Tyromyces cf. *sibiricus* was recently described from Siberia (Penzina & Ryvarden 1998). Some Chinese specimens were previously identified as *T.* cf. *subgiganteus* (Berk. & M.A. Curtis) Ryvarden (Dai 1996). After carefully checking my material, it turned out to be closer to *T. sibiricus*. Its pores are 5–8 per mm, and its spores are more or less ellipsoid with a large guttule, (4.4–)5–6(–6.5) × 4–5(–5.2) μm, L=5.55 μm, W= 4.49 μm, Q=1.24 (n=30/1). *T. sibiricus* has globose spores, 4.5–5 μm in diameter, and its pores are relatively large (4–5 per mm). For the time being I treat my collections as *T.* cf. *sibiricus*.

New combinations

Inonotopsis exilispora (Y.C. Dai & Niemelä) Y.C. Dai, *comb. nov.* – Basionym: *Inonotus exilispora* Y.C. Dai & Niemelä, Mycotaxon 55: 275, 1997.

In the present paper species in *Inonotus* P. Karst. *sensu lato* were transferred into the homogeneous genera *Inocutis* Fiasson & Niemelä, *Inonotopsis* Parmasto, *Inonotus sensu stricto*, and *Onnia* P. Karst. *Inonotus s.str.* only includes the species which have setae, and thick-walled and coloured spores, but lacks a contextual core. *Inonotopsis exilispora* was originally described under the genus *Inonotus s.l.* (Dai *et al.* 1997), and it has hyaline and thin-walled spores. Therefore it is more closely related to *Inonotopsis* rather than *Inonotus*.

Inocutis levis (P. Karst.) Y.C. Dai, *comb. nov.* – Basionym: *Inonotus levis* P. Karst., Hedwigia 26: 112, 1887 (lectotype in H, studied).

Inonotus levis P. Karst. was reported from western China (Dai *et al.* 1997), and it is characterized by a distinct basal core, thick-walled and yellowish brown spores, and by the absence of setae. So it evidently belongs to *Inocutis*, so the above combination is proposed.

Trichaptum polycystidium (Pilát) Y.C. Dai, *comb. nov.* – Basionym: *Poria polycystidiata* Pilát., Bull. Soc. Mycol. France, 49: 277, 1934 (holotype, PRM 498237, studied).

This species was originally described from Amur District in the Russian Far East (Pilát 1934), and it was re-described as *Hirschioporus quercinus* Parmasto (Parmasto & Parmasto 1987). The types of both names, collected on *Quercus mongolica*, were studied, and they are identical.

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