

Species diversity of wood-decaying fungi in Northeast China

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Abstract: The knowledge of wood-decaying fungi in northeastern China is summarized, and 504 species, including their host and distribution in NE China, are listed alphabetically. Among them, 300 species are polyporoid fungi, 204 are corticioid fungi, 57 are forest pathogens, and 69 are medicinal fungi. Two species, *Perenniporia pyricola* and *Wrightoporia borealis*, are new to science, and their illustrated descriptions are given. All the names were checked or revised in accordance with the contemporary taxonomy and the latest version of the International Code of Botanical Nomenclature (Vienna Code).

Key words: biological resources, corticioid fungi, polyporoid fungi, new species

中国东北地区木材腐朽菌的多样性

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摘要: 对中国东北地区木材腐朽菌资源研究进行了总结, 给出了每种木材腐朽菌的寄主和在东北的分布。目前中国东北地区共记载木材腐朽菌 504 种, 其中 300 种为多孔菌, 204 种为革菌, 57 种为林木病原菌, 69 种为药用菌。梨多年卧孔菌 *Perenniporia pyricola* 和北方赖特孔菌 *Wrightoporia borealis* 为新种, 对它们进行了描述和绘图。对所有名称按最新命名法规 (维也纳法规) 进行了订正。

关键词: 生物资源, 革菌, 多孔菌, 新种

INTRODUCTION

Wood-decaying fungi are one of the most important groups of macrofungi. They play a key role in the substance circulation of forest ecosystem (Wei & Dai 2004) and many of them have important economic value as food and medicines (Dai & Yang 2008; Dai *et al.* 2010). In addition, some species are forest pathogens

(Dai *et al.* 2007b).

Wood-decaying fungi are not a taxonomically natural taxon, but have a similar ecology in nature. Based on the modern taxonomy (Kirk *et al.* 2008), species in orders of Polyporales, Corticiales, Hymenochaetales, Thelephorales, Atheliales, Gloeophyllales and Trechisporales are the major wood-decaying fungi;

however, according to phylogenetic studies, some wood-decaying fungi are treated in the orders of Cantharellales, Russulales, Agaricales and Auriculariales.

Northeast China has the most important forest resources in the country, although virgin forests have dramatically diminished because of improper deforestation during 60–80's of the last century. Since the beginning of this century deforestation of natural forests has been prohibited, and most natural forests in northeastern China have changed into forest parks or nature reserves. Wood-decaying fungi are very rich in the area, and 260 polyporoid and 155 corticioid fungi were recorded previously (Dai 2000; Dai *et al.* 2004a). As intensive inventories and studies on the wood-decaying fungi have been carried out recently, some new species and new Chinese records were found, but the additional records scattered in different papers. Besides, the hosts and distribution of the species in previous reports were not mentioned or incomplete (Dai 2000; Dai *et al.* 2004a). Therefore, a comprehensive catalogue is necessary.

1 MATERIALS AND METHODS

By support of the National Natural Science Foundation of China, projects for studying resources and diversity of wood-decaying fungi in northeastern China were carried out. During 18 field trips in the forest areas of Heilongjiang, Inner Mongolia, Jilin and Liaoning Province (Fig. 1), more than 3,000 specimens of wood-decaying fungi were collected. The studied specimens are deposited in the herbarium of Institute of Applied Ecology, Chinese Academy of Sciences (IFP) and Beijing Forestry University (BJFC). Base on the studies of herbarium specimens and previous publications (Dai *et al.* 2004b; Wei *et al.* 2005; Dai & Penttilä 2006;

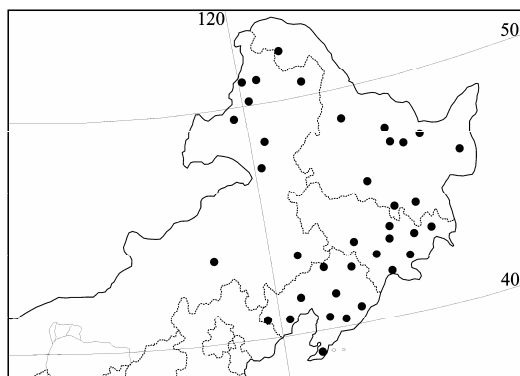


Fig. 1 The locations of investigated areas in northeastern China (black dots).

Dai *et al.* 2007a; Dai & Xiong 2008; Yuan *et al.* 2006, 2009), a catalogue on wood-decaying fungi in northeastern China is provided, and the host and distribution of each species are supplied.

The checklist is alphabetically arranged by the genus, and species within genera. The authors of scientific names are abbreviated mostly according to Brummitt & Powell (1992). Because more new fungal name authors have been accumulated during last 18 years, the new authors are followed by the second edition of AUTHORS OF FUNGAL NAMES (available in <http://www.indexfungorum.org/AuthorsOfFungalNames.htm>).

The microscopic routine used in the description is as presented by Cui & Dai (2008). In the text the following abbreviations were used: L = spore length (arithmetical average of all spores), W = spore width (arithmetical average of all spores), Q = variation in the L/W ratios between the specimens studied (quotient of the mean spore length and the mean spore width of each specimen), n = number of spores measured from given number of specimens. IKI = Melzer's reagent, IKI– = both inamyloid and indextrinoid, KOH = 5% potassium hydroxide, and CB = Cotton Blue. CB+ = cyanophilous and CB– = acyanophilous. In presenting the variation in the size of the spores, 5% of the measurements were excluded from each end of the range, and are given in parentheses.

2 RESULTS

2.1 List of corticioid species

1. *Aleurocystidiellum disciforme* (DC.) Telleria, *Fraxinus*, *Pinus*, Heilongjiang, Jilin
2. *Aleurocystidiellum subcruentatum* (Berk. & M.A. Curtis) P.A. Lemke, *Abies*, *Picea*, Heilongjiang, Jilin
3. *Aleurodiscus amorphus* (Pers.) J. Schröt., *Abies*, *Picea*, Heilongjiang
4. *Aleurodiscus diffusus* (Sacc.) Burt, *Juglans*, *Quercus*, Jilin
5. *Aleurodiscus tsugae* Yasuda, *Pinus*, Jilin
6. *Amphinema byssoides* (Pers.) J. Erikss., *Picea*, Jilin
7. *Amylocorticium laceratum* (Litsch.) Hjortstam & Ryvarden, *Pinus*, Jilin
8. *Amylocorticium subincarnatum* (Peck) Pouzar, *Abies*, Jilin
9. *Amylocorticium subsulphureum* (P. Karst.) Pouzar,

- Larix*, Jilin
10. *Amylosporomyces subasperisporus* (Litsch.) Hjortstam & Ryvarde, *Abies*, Jilin
 11. *Amylostereum chailletii* (Pers.) Boidin, *Picea*, Jilin
 12. *Aphanobasidium pseudotsugae* (Burt) Boidin & Gilles, *Abies*, Jilin
 13. *Asterodon ferruginosus* Pat., *Picea*, Jilin
 14. *Asterostroma cervicolor* (Berk. & M.A. Curtis) Masee, *Tilia*, Jilin
 15. *Athelia decipiens* (Höhn. & Litsch.) J. Erikss., *Betula*, *Populus*, Jilin
 16. *Athelia fibulata* M.P. Christ., *Rhododendron*, Jilin
 17. *Auriculariopsis ampla* (Lév.) Maire, *Betula*, Jilin
 18. *Auriscalpium vulgare* Gray, gymnosperm, Jilin
 19. *Basidioradulum radula* (Fr.) Nobles, *Acer*, Jilin
 20. *Boidinia furfuracea* (Bres.) Stalpers & Hjortstam, *Abies*, *Larix*, *Picea*, Jilin
 21. *Boidinia laticolor* (Bres.) Hjortstam & Ryvarde, angiosperm, Jilin
 22. *Boidinia peroxydata* (Rick) Hjortstam & Ryvarde, angiosperm, Jilin
 23. *Boidinia propingua* (H.S. Jacks. & Dearden) Hjortstam & Ryvarde, *Quercus*, Jilin
 24. *Boreostereum radiatum* (Peck) Parmasto, *Picea*, Jilin
 25. *Botryobasidium intertextum* (Schwein.) Jülich & Stalpers, angiosperm, Jilin
 26. *Botryohypochnus bondarcevii* Parmasto, angiosperm, Jilin
 27. *Botryohypochnus isabellinus* (Fr.) J. Erikss., *Picea*, *Pinus*, Jilin
 28. *Byssocorticius atrovirens* (Fr.) Bondartsev & Singer, angiosperm, Heilongjiang
 29. *Byssomerulius albostramineus* (Torrend) Hjortstam, *Acer*, *Pinus*, Jilin
 30. *Byssomerulius corium* (Fr.) Parmasto, angiosperm, Jilin, Liaoning
 31. *Ceraceomyces borealis* (Romell) J. Erikss. & Ryvarde, angiosperm, Jilin
 32. *Ceraceomyces sublaevis* (Bres.) Jülich, angiosperm, Jilin
 33. *Ceraceomyces sulphurinus* (P. Karst.) J. Erikss. & Ryvarde, *Ulmus*, Jilin
 34. *Ceratobasidium gramineum* (Ikata & T. Matsuura) Oniki *et al.*, angiosperm, Jilin
 35. *Chondrostereum purpureum* (Pers.) Pouzar, *Betula*, *Populus*, *Tilia*, Heilongjiang, Jilin
 36. *Clavulicium macounii* (Burt) J. Erikss. & Boidin ex Parmasto, *Abies*, *Picea*, Jilin
 37. *Climacodon septentrionalis* (Fr.) P. Karst., *Acer*, Heilongjiang, Jilin
 38. *Conferticium ochraceum* (Fr.) Hallenb., *Larix*, Jilin
 39. *Coniophora arida* (Fr.) P. Karst., angiosperm, Jilin
 40. *Coniophora olivacea* (Fr.) P. Karst., gymnosperm, Jilin
 41. *Coniophora puteana* (Schumach.) P. Karst., angiosperm, Jilin
 42. *Coronicium proximum* (H.S. Jacks.) Jülich, angiosperm, Jilin
 43. *Corticium roseum* Pers., *Betula*, Inner Mongolia, Jilin
 44. *Cotylidia komabensis* (Henn.) D.A. Reid, ground, Jilin
 45. *Cotylidia undulata* (Fr.) P. Karst., angiosperm, Jilin
 46. *Creolophus cirrhatus* (Pers.) P. Karst., *Quercus*, Jilin
 47. *Cristinia helvetica* (Pers.) Parmasto, *Fraxinus*, Jilin
 48. *Crustoderma dryinum* (Berk. & M.A. Curtis) Parmasto, *Picea*, Heilongjiang
 49. *Crustomyces expallens* (Bres.) Hjortstam, wood, Jilin
 50. *Cylindrobasidium laeve* (Pers.) Chamuris, angiosperm, Jilin
 51. *Cymatoderma elegans* Jungh., angiosperm, Jilin
 52. *Cystostereum murrayi* (Berk. & M.A. Curtis) Pouzar, *Picea*, Heilongjiang, Jilin
 53. *Cytidia salicina* (Fr.) Burt, *Salix*, Jilin, Liaoning
 54. *Dacryobolus karstenii* (Bres.) Oberw. ex Parmasto, *Picea*, *Pinus*, Jilin
 55. *Dendrothele versiformis* (Berk. & M.A. Curtis) Chamuris, angiosperm, Heilongjiang, Inner Mongolia, Jilin
 56. *Dentipellis acystidia* Y.C. Dai *et al.*, angiosperm, gymnosperm, Heilongjiang, Jilin
 57. *Dentipellis fragilis* (Pers.) Donk, *Acer*, *Betula*, *Populus*, *Tilia*, Heilongjiang, Jilin
 58. *Dentipellis leptodon* (Mont.) Maas Geest., angiosperm, Jilin
 59. *Dentipellis microspora* Y.C. Dai, *Abies*, *Picea*, Jilin
 60. *Dentipellis separans* (Peck) Donk, *Pinus*, Heilongjiang

61. *Dentocorticium ussuricum* (Parmasto) M.J. Larsen & Gilb., *Acer*, Jilin
62. *Dichostereum boreale* (Pouzar) Ginns & M.N.L. Lefebvre, angiosperm, Jilin
63. *Fibricium rude* (P. Karst.) Jülich, wood, Jilin
64. *Globulicium hiemale* (Laurila) Hjortstam, angiosperm, Jilin
65. *Gloeopeniophorella convolvens* (P. Karst.) Boidin *et al.*, *Acer*, Jilin
66. *Gloeostereum incarnatum* S. Ito & S. Imai, *Quercus*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
67. *Gloiodon strigosus* (Sw.) P. Karst., *Fraxinus*, *Populus*, *Tilia*, Jilin
68. *Gloiothele citrina* (Pers.) Ginns & G.W. Freeman, angiosperm, Jilin
69. *Haplotrichum curtisii* (Berk.) Hol.-Jech., *Pinus*, Jilin
70. *Henningsomyces leptos* Y.L. Wei & Y.C. Dai, *Picea*, Jilin
71. *Hericum coralloides* (Scop.) Pers., *Acer*, *Populus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
72. *Hericum erinaceus* (Bull.) Pers., *Populus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
73. *Hydnum repandum* L., ground, Heilongjiang, Jilin
74. *Hymenochaete adusta* (Lév.) Pat., wood, Jilin
75. *Hymenochaete cinnamomea* (Fr.) Bres., *Syringa*, Jilin
76. *Hymenochaete corrugata* (Fr.) Lév., *Padus*, Jilin
77. *Hymenochaete cruenta* (Pers.) Donk, *Abies*, Heilongjiang, Jilin
78. *Hymenochaete intricata* Lloyd, *Populus*, Jilin
79. *Hymenochaete macrospora* Y.C. Dai, *Acer*, Jilin
80. *Hymenochaete rheicolor* (Mont.) Lév., *Quercus*, Jilin
81. *Hymenochaete rubiginosa* (Dicks.) Lév., *Quercus*, Jilin, Liaoning
82. *Hymenochaete semistupposa* Petch, *Betula*, *Maackia*, Jilin
83. *Hymenochaete tabacina* (Sow.) Lév., *Acer*, *Betula*, *Tilia*, Heilongjiang, Jilin, Liaoning
84. *Hymenochaete villosa* (Lév.) Bres., *Quercus*, Jilin
85. *Hyphoderma medioburiense* (Burt) Donk, *Betula*, Jilin
86. *Hyphoderma mutatum* (Peck) Donk, *Acer*, Jilin
87. *Hyphoderma praetermissum* (P. Karst.) J. Erikss. & Å. Strid, angiosperm, Jilin, Liaoning
88. *Hyphoderma puberum* (Fr.) Wallr., *Pinus*, Jilin
89. *Hyphoderma rude* (Bres.) Hjortstam & Ryvarden, *Maackia*, *Pinus*, Jilin, Liaoning
90. *Hyphoderma setigerum* (Fr.) Donk, angiosperm, Jilin, Liaoning
91. *Hyphoderma sibiricum* (Parmasto) J. Erikss. & Å. Strid, *Abies*, Jilin
92. *Hyphoderma transiens* (Bres.) Parmasto, angiosperm, Jilin
93. *Hyphodontia abieticola* (Bourdot & Galzin) J. Erikss., gymnosperm, Jilin
94. *Hyphodontia altaica* Parmasto, *Larix*, Jilin
95. *Hyphodontia alutaria* (Burt) J. Erikss, gymnosperm, Jilin
96. *Hyphodontia arguta* (Fr.) J. Erikss., angiosperm, Jilin
97. *Hyphodontia aspera* (Fr.) J. Erikss., angiosperm, Jilin, Liaoning
98. *Hyphodontia breviseta* (P. Karst.) J. Erikss., gymnosperm, Jilin
99. *Hyphodontia crustosa* (Pers.) J. Erikss., angiosperm, Jilin, Liaoning
100. *Hyphodontia curvispora* J. Erikss. & Hjortstam, *Pinus*, Jilin
101. *Hyphodontia hastata* (Litsch.) J. Erikss., *Pinus*, Jilin
102. *Hyphodontia pallidula* (Bres.) J. Erikss., *Pinus*, Jilin
103. *Hyphodontia pruni* (Lasch) Svrček, *Betula*, Jilin
104. *Hyphodontia rimosissima* (Peck) Gilb., angiosperm, Jilin
105. *Hyphodontia sambuci* (Bres.) J. Erikss., gymnosperm, Jilin
106. *Hyphodontia sinensis* H.X. Xiong *et al.*, gymnosperm, Heilongjiang
107. *Hyphodontia spathulata* (Schrad.) Parmasto, *Larix*, Heilongjiang, Jilin
108. *Hyphodontia subglobasa* Sheng H. Wu, angiosperm, Jilin
109. *Hyphodontia syringae* Langer, *Syringa*, Jilin
110. *Hypochniciellum cremeoisabellinum* (Litsch.) Hjortstam, angiosperm, Jilin
111. *Hypochnicium analogum* (Bourdot & Galzin) J. Erikss., *Acer*, Jilin
112. *Hypochnicium erikssonii* Hallenb. & Hjortstam, angiosperm, Liaoning
113. *Hypochnicium polonense* (Bres.) Å. Strid, *Fraxinus*,

- Tilia*, Jilin
114. *Hypochnicium punctulatum* (Cooke) J. Erikss., *Carya*, Liaoning
115. *Intextomyces contiguus* (P. Karst.) J. Erikss. & Ryvarden, angiosperm, Jilin
116. *Jaapia ochroleuca* (Bres.) Nannf. & J. Erikss., wood, Jilin
117. *Kavinia alboviridis* (Morgan) Gilb. & Budington, angiosperm, Jilin
118. *Laurilia sulcata* (Burt) Pouzar, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin
119. *Laxitextum bicolor* (Pers.) Lentz, angiosperm, Jilin
120. *Leptosporomyces fuscostratus* (Burt) Hjortstam, *Abies*, *Larix*, Jilin
121. *Leptosporomyces mutabilis* (Bres.) L.G. Krieglst., *Larix*, Jilin
122. *Leptosporomyces roseus* Jülich, *Larix*, Jilin
123. *Lobulicium occultum* K.H. Larss. & Hjortstam, *Abies*, Jilin
124. *Lopharia cinerascens* (Schwein.) G. Cunn., angiosperm, Liaoning
125. *Lopharia mirabilis* (Berk. & Broome) Pat., *Lonicera*, Inner Mongolia, Jilin, Liaoning
126. *Meruliopsis corium* (Pers.) Ginns, angiosperm, Jilin
127. *Mucronella bresadolae* (Quél.) Corner, angiosperm, Jilin
128. *Mucronella calva* (Alb. & Schwein.) Fr., gymnosperm, Heilongjiang
129. *Mycoleptodonoides aitchisonii* (Berk.) Maas Geest., *Populus*, Jilin
130. *Mycoleptodonoides vassiljevae* M.I. Nikol., *Acer*, Jilin
131. *Peniophora polygonia* (Pers.) Bourdot & Galzin, angiosperm, Jilin
132. *Peniophora rufa* (Per.) Boidin, *Betula*, *Populus*, *Salix*, Jilin
133. *Phanerochaete australis* Jülich, angiosperm, Jilin
134. *Phanerochaete calotricha* (P. Karst.) J. Erikss. & Ryvarden, angiosperm, Jilin
135. *Phanerochaete chrysorhizon* (Torr.) Budington & Gilb., angiosperm, Jilin, Liaoning
136. *Phanerochaete crassa* (Lév.) Burds., *Quercus*, Inner Mongolia
137. *Phanerochaete filamentosa* (Berk. & M.A. Curtis.) Burds., angiosperm, Jilin
138. *Phanerochaete galactites* (Bourdot & Galzin) J. Erikss. & Ryvarden, *Populus*, *Tilia*, Jilin
139. *Anerochaete ravenelii* (Cooke) Burds., angiosperm, Jilin
140. *Rochaete sanguinea* (Fr.) Pouzar, angiosperm, Jilin
141. *Phanerochaete velutina* (DC.) P. Karst., *Quercus*, Jilin, Liaoning
142. *Phanerochaete viticola* (Schwein.) Parmasto, *Sorbus*, Jilin
143. *Phellodon confluens* (Pers.) Pouzar, wood, Jilin
144. *Phellodon tomentosus* (L.) Banker, wood, Jilin
145. *Phlebia centrifuga* P. Karst., gymnosperm, Jilin
146. *Phlebia gigantea* (Fr.) Donk, *Larix*, *Picea*, *Pinus*, Jilin
147. *Phlebia pellucida* Hjortstam & Ryvarden, *Larix*, Jilin
148. *Phlebia radiata* Fr., *Betula*, *Populus*, *Quercus*, *Salix*, Heilongjiang, Jilin, Liaoning
149. *Phlebia rufa* (Pers.) M.P. Christ., gymnosperm, Jilin, Liaoning
150. *Phlebia tremellosa* (Schr.) Nakasone & Burds., *Betula*, *Populus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
151. *Phlebia vassilkovii* Parmasto, *Acer*, Jilin
152. *Phlebiella sulphurea* (Pers.) Ginns & M.N.L. Lefebvre, *Rhododendron*, Jilin
153. *Piloderma byssinum* (P. Karst.) Jülich, angiosperm, Jilin
154. *Piloderma lanatum* J. Erikss. & Hjortstam, wood, Jilin
155. *Plicatura crispa* (Pers.) Rea, *Rhododendron*, Heilongjiang, Inner Mongolia, Jilin
156. *Pseudohydnum gelatinosum* (Scop.) P. Karst., *Pinus*, Heilongjiang, Inner Mongolia, Jilin
157. *Pseudomerulius aureus* (Fr.) Jülich, *Pinus*, Jilin, Liaoning
158. *Pseudotomentella flavovirens* (Höhn. & Litsch.) Svrček, angiosperm, Jilin
159. *Pulcherricium caeruleum* (Fr.) Parmasto, angiosperm, Jilin, Liaoning
160. *Punctularia strigosozonata* (Schwein.) P.H.B. Talbot, *Populus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
161. *Radulodon licentii* (Pilát) Ryvarden, *Acer*, Jilin, Liaoning

162. *Radulomyces confluens* (Fr.) M.P. Christ.,
angiosperm, Jilin
163. *Radulomyces copelandii* (Pat.) Hjortstam &
Spooner, angiosperm, Jilin, Liaoning
164. *Rectipilus fasciculatus* (Pers.) Agerer, *Pinus*,
Heilongjiang
165. *Resinicium bicolor* (Alb. & Schwein.) Parmasto,
angiosperm, Jilin
166. *Resinicium furfuraceum* (Bres.) Parmasto, *Pinus*,
Jilin
167. *Resinicium pinicola* (J. Erikss.) J. Erikss. &
Hjortstam, angiosperm, Jilin
168. *Sacodon imbricatus* (L.) P. Karst., ground, Jilin
169. *Scytinostroma duriusculum* (Berk. & Broome)
Donk, angiosperm, Jilin
170. *Scytinostroma galactinum* (Fr.) Donk, *Abies*, *Pinus*,
Heilongjiang, Inner Mongolia, Jilin
171. *Scytinostroma odoratum* (Fr.) Donk, angiosperm,
Jilin
172. *Scytinostroma portentosum* (Berk. & M.A. Curtis)
Donk, angiosperm, Jilin
173. *Serpula himantioides* (Fr.) P. Karst., *Abies*, *Larix*,
Pinus, Heilongjiang, Jilin
174. *Sistotrema athelioides* Hallenb., *Acer*, *Betula*, Jilin
175. *Sistotremastrum niveocreameum* (Höhn. & Litsch.)
J. Erikss., gymnosperm, Jilin
176. *Sparassis latifolia* Y.C. Dai *et al.*, *Larix*, Jilin
177. *Steccherinum adustum* (Schwein.) Maas Geest.,
Betula, *Quercus*, Heilongjiang, Jilin
178. *Steccherinum fimbriatum* (Pers.) J. Erikss., *Populus*,
Heilongjiang, Jilin
179. *Steccherinum hydneum* (Rick) Maas Geest.,
angiosperm, Heilongjiang
180. *Steccherinum laeticolor* (Berk. & M.A. Curtis.)
Banker, *Populus*, Heilongjiang, Inner Mongolia,
Jilin
181. *Steccherinum mukhinii* Kortiranta & Y.C. Dai,
Abies, Heilongjiang, Jilin
182. *Steccherinum murashkinskyi* (Burt) Maas Geest.,
Alnus, *Betula*, *Juglans*, *Maackia*, Jilin, Liaoning
183. *Steccherinum ochraceum* (Pers.) Gray, *Alnus*,
Betula, Heilongjiang, Inner Mongolia, Jilin,
Liaoning
184. *Steccherinum rawakense* (Pers.) Banker,
angiosperm, Heilongjiang, Inner Mongolia, Jilin,
Liaoning
185. *Steccherinum subglobosum* H.S. Yuan & Y.C. Dai,
gymnosperm, *Quercus*, Heilongjiang, Jilin,
Liaoning
186. *Stereum hirsutum* (Willd.) Pers., *Betula*, *Quercus*,
Heilongjiang, Jilin, Liaoning
187. *Stereum rugosum* Pers., angiosperm, Liaoning
188. *Stereum sanguinolentum* (Alb. & Schwein.) Fr.,
Abies, *Picea*, Inner Mongolia, Heilongjiang, Jilin,
Liaoning
189. *Stereum subtomentosum* Pouzar, *Acer*, *Betula*,
Tilia, *Ulmus*, Inner Mongolia, Heilongjiang, Jilin,
Liaoning
190. *Subulicystidium longisporum* (Pat.) Parmasto,
Larix, Jilin
191. *Terana coerulea* (Lam.) Kuntz, angiosperm, Jilin
192. *Thanatephorus fusisporus* (J. Schröt.) Hauerslev &
P. Roberts, angiosperm, Jilin
193. *Thelephora caryophyllea* (Schaeff.) Pers., ground,
Jilin
194. *Thelephora multipartita* Schwein., ground, Jilin
195. *Thelephora terrestris* Ehrh., ground, Inner
Mongolia, Heilongjiang, Jilin, Liaoning
196. *Thelephora trachycarpusata* (Scop.) Fr.,
angiosperm, Heilongjiang
197. *Tomentella crinalis* (Fr.) M.J. Larsen, *Populus*,
Tilia, Heilongjiang, Jilin, Liaoning
198. *Trechispora cohaerens* (Schwein.) Jülich &
Stalpers, angiosperm, Jilin
199. *Trechispora farinacea* (Pers.) Liberta, angiosperm,
Jilin
200. *Tubulicrinis sceptriifer* (H.S. Jacks. & Weresub)
Donk, *Abies*, Jilin
201. *Tylospora asterophora* (Bonord.) Donk,
angiosperm, Jilin
202. *Veluticeps abietina* (Pers.) Hjortstam & Tellería,
Abies, *Picea*, Heilongjiang, Jilin
203. *Xenasma pruinosum* (Pat.) Donk, wood, Jilin
204. *Xylobolus frustulatus* (Pers.) Boidin, *Quercus*,
Heilongjiang, Jilin, Liaoning

2.2 List of polyporoid species

1. *Abortiporus biennis* (Bull.) Singer, angiosperm,
Heilongjiang

2. *Abundisporus pubertatis* (Lloyd) Parmasto, *Quercus*, Liaoning
3. *Albatrellus peckianus* (Cooke) Niemelä, angiosperm, Inner Mongolia
4. *Albatrellus syringae* (Parmasto) Pouzar, ground, Heilongjiang
5. *Amylocystis lapponica* (Romell) Singer, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin
6. *Anomoloma albulutescens* (Romell) Niemelä & K.H. Larss., *Abies*, *Larix*, *Pinus*, Heilongjiang, Jilin, Liaoning
7. *Anomoloma flavissimum* (Niemelä) Niemelä & K.H. Larss., *Abies*, *Acer*, *Betula*, *Larix*, *Picea*, *Pinus*, *Populus*, Heilongjiang, Jilin
8. *Anomoloma myceliosum* (Peck) Niemelä & K.H. Larss., *Abies*, *Acer*, *Pinus*, Heilongjiang, Jilin
9. *Anomoporia bombycina* (Fr.) Pouzar, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
10. *Anomoporia vesiculosa* Y.C. Dai & Niemelä, *Abies*, *Pinus*, Inner Mongolia, Jilin
11. *Antrodia albida* (Fr.) Donk, *Acer*, *Alnus*, *Betula*, *Fraxinus*, *Maackia*, *Phellodendron*, *Picea*, *Pinus*, *Populus*, *Quercus*, *Robinia*, *Salix*, *Tilia*, Heilongjiang, Jilin, Liaoning
12. *Antrodia carbonica* (Overh.) Ryvarden & Gilb., *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin
13. *Antrodia crassa* (P. Karst.) Ryvarden, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
14. *Antrodia heteromorpha* (Fr.) Donk, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
15. *Antrodia hingganensis* Y.C. Dai & Penttilä, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
16. *Antrodia infirma* Renvall & Niemelä, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
17. *Antrodia leucaena* Y.C. Dai & Niemelä, *Populus*, Heilongjiang, Jilin
18. *Antrodia macrospora* Bernic. & De Dom., *Quercus*, Heilongjiang, Jilin, Liaoning
19. *Antrodia malicola* (Berk. & M.A. Curtis) Donk, *Acer*, *Juglans*, *Populus*, *Quercus*, *Salix*, *Sophora*, *Tilia*, Heilongjiang, Jilin, Liaoning
20. *Antrodia oleracea* (R.W. Davidson & Lombard) Ryvarden, *Quercus*, Jilin
21. *Antrodia primaeva* Renvall & Niemelä, *Abies*, *Pinus*, Inner Mongolia, Jilin
22. *Antrodia serialis* (Fr.) Donk, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
23. *Antrodia sitchensis* (Baxter) Gilb. & Ryvarden, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
24. *Antrodia variiformis* (Peck) Donk, *Abies*, *Pinus*, Inner Mongolia, Jilin, Liaoning
25. *Antrodia xantha* (Fr.) Ryvarden, *Acer*, *Betula*, *Chosenia*, *Larix*, *Picea*, *Pinus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
26. *Antrodiella albocinnamomea* Y.C. Dai & Niemelä, *Acer*, *Betula*, *Carpinus*, *Juglans*, *Padus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
27. *Antrodiella americana* Ryvarden & Gilb., *Alnus*, *Betula*, *Tilia*, Heilongjiang, Jilin
28. *Antrodiella aurantilaeta* (Corner) T. Hatt. & Ryvarden, angiosperm, Heilongjiang
29. *Antrodiella brunneimontana* (Corner) T. Hatt., *Acer*, *Alnus*, *Betula*, *Corylus*, *Juglans*, *Maackia*, *Populus*, *Quercus*, *Sorbus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
30. *Antrodiella citrinella* Niemelä & Ryvarden, *Pinus*, Heilongjiang, Jilin
31. *Antrodiella faginea* Vampola & Pouzar, *Acer*, *Betula*, *Populus*, Jilin
32. *Antrodiella gypsea* (Yasuda) T. Hatt. & Ryvarden, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin, Liaoning
33. *Antrodiella micra* Y.C. Dai, *Picea*, Jilin
34. *Antrodiella pallasii* Renvall, *Picea*, Heilongjiang
35. *Antrodiella romellii* (Donk) Niemelä s. l., *Populus*, Heilongjiang, Jilin, Liaoning
36. *Antrodiella semisupina* (Berk. & M.A. Curtis) Ryvarden s. l., *Acer*, *Alnus*, *Betula*, *Quercus*, *Ulmus*, Heilongjiang, Jilin, Liaoning
37. *Antrodiella stipitata* H.S. Yuan & Y.C. Dai, *Populus*, Heilongjiang
38. *Aurantiporus croceus* (Pers.) Murrill, *Pinus*, Jilin
39. *Aurantiporus fissilis* (Berk. & M.A. Curtis) H. Jahn, angiosperm, Jilin
40. *Auriporia aurea* (Peck) Ryvarden, *Tilia*, Jilin, Liaoning
41. *Bjerkandera adusta* (Willd.) P. Karst., *Acer*, *Betula*,

- Chosenia*, *Juglans*, *Larix*, *Padus*, *Pinus*, *Populus*, *Prunus*, *Salix*, *Syringa*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
42. *Bjerkandera fumosa* (Pers.) P. Karst., *Alnus*, *Betula*, *Carpinus*, *Fraxinus*, *Juglans*, *Populus*, *Rhamnus*, *Robinia*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
43. *Castanoporus castaneus* (Lloyd) Ryvarden, *Larix*, *Pinus*, Heilongjiang, Jilin, Liaoning
44. *Ceriporia alachuana* (Murrill) Hallenb., *Lonicera*, Liaoning
45. *Ceriporia excelsa* (S. Lundell) Parmasto, *Acer*, *Larix*, *Pinus*, Heilongjiang, Jilin
46. *Ceriporia purpurea* (Fr.) Donk, *Acer*, *Alnus*, *Padus*, *Populus*, *Salix*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
47. *Ceriporia spissa* (Schwein. ex Fr.) Rajchenb., *Acer*, *Tilia*, Heilongjiang, Jilin, Liaoning
48. *Ceriporia tarda* (Berk.) Ginns, *Abies*, *Larix*, Jilin
49. *Ceriporia viridans* (Berk. & Broome) Donk, *Acer*, *Larix*, *Populus*, *Quercus*, *Tilia*, Inner Mongolia, Jilin, Liaoning
50. *Ceriporiopsis albonigrescens* Núñez, Parmasto & Ryvarden, *Abies*, Jilin
51. *Ceriporiopsis aneirina* (Sommerf.) Domański, *Chosenia*, *Populus*, Heilongjiang, Jilin
52. *Ceriporiopsis balaenae* Niemelä, *Populus*, *Ulmus*, Jilin, Liaoning
53. *Ceriporiopsis consobrina* (Bresadola) Ryvarden, *Betula*, Jilin
54. *Ceriporiopsis cremea* (Parmasto) Ryvarden, *Populus*, *Pinus*, Jilin, Liaoning
55. *Ceriporiopsis gilvescens* (Bres.) Domański, *Acer*, *Fraxinus*, *Juglans*, *Populus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
56. *Ceriporiopsis jelicii* (Tortić & A. David) Ryvarden & Gilb., *Pinus*, Heilongjiang
57. *Ceriporiopsis mucida* (Pers.) Gilb. & Ryvarden, *Abies*, *Larix*, *Picea*, *Pinus*, *Populus*, *Syringa*, Heilongjiang, Jilin, Liaoning
58. *Ceriporiopsis resinascens* (Romell) Domański, *Acer*, *Tilia*, Liaoning
59. *Cerrena unicolor* (Bull.) Murrill, *Acer*, *Alnus*, *Betula*, *Chosenia*, *Juglans*, *Larix*, *Picea*, *Prunus*, *Quercus*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
60. *Cinereomyces lenis* (P. Karst.) Spirin, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin
61. *Cinereomyces lindbladii* (Berk.) Jülich, angiosperm, *Larix*, *Picea*, *Pinus*, *Salix*, Heilongjiang, Inner Mongolia, Jilin
62. *Cinereomyces vulgaris* (Fr.) Spirin, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
63. *Climacocystis borealis* (Fr.) Kotl. & Pouzar, *Picea*, *Pinus*, Heilongjiang, Jilin
64. *Coltricia cinnamomea* (Jacq.) Murrill, ground, Liaoning
65. *Coltricia perennis* (L.) Murrill, ground, Heilongjiang, Jilin
66. *Cryptoporus volvatus* (Peck) Shear, *Pinus*, Heilongjiang
67. *Cyclomyces xeranticus* (Berk.) Y.C. Dai & Niemelä, *Acer*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
68. *Daedalea dickinsii* Yasuda, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
69. *Daedaleopsis confragosa* (Bolton) J. Schroet., *Betula*, *Carya*, *Chosenia*, *Fraxinus*, *Juglans*, *Salix*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
70. *Daedaleopsis sinensis* (Lloyd) Y.C. Dai, *Alnus*, *Betula*, Heilongjiang, Inner Mongolia, Jilin
71. *Daedaleopsis tricolor* (Bull.) Bondartsev & Singer, *Acer*, *Betula*, *Corylus*, *Juglans*, *Populus*, *Quercus*, *Salix*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
72. *Datronia mollis* (Sommerf.) Donk, *Acer*, *Alnus*, *Betula*, *Salix*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
73. *Datronia scutellata* (Schwein.) Gilb. & Ryvarden, *Acer*, *Alnus*, *Corylus*, *Quercus*, Heilongjiang, Jilin, Liaoning
74. *Datronia stereoides* (Fr.) Ryvarden, *Acer*, *Populus*, Heilongjiang, Jilin
75. *Dichomitus campestris* (Quél.) Domański & Orlicz, angiosperm, Jilin
76. *Dichomitus squalens* (P. Karst.) D.A. Reid, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
77. *Diplomitoporus crustulinus* (Bres.) Domański,

- Abies*, Jilin, Liaoning
78. *Diplomitoporus flavescens* (Bres.) Domański, *Pinus*, Heilongjiang, Jilin
79. *Donkioporia expansa* (Desm.) Kotl. & Pouzar, *Ulmus*, Jilin
80. *Echinochaete russiceps* (Berk. & Broome) D.A. Reid, *Betula*, Liaoning
81. *Elmerina cladophora* (Berk.) Bres., *Quercus*, Heilongjiang, Jilin
82. *Elmerina holophaea* (Pat.) Parmasto, *Acer*, *Picea*, *Quercus*, *Tilia*, Heilongjiang, Jilin
83. *Fibroporia gossypium* (Speg.) Parmasto, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin, Liaoning
84. *Fibroporia radiculosa* (Peck) Parmasto, *Pinus*, Liaoning
85. *Fibroporia vaillantii* (DC.) Parmasto, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
86. *Fomes fomentarius* (L.) J.J. Kickx, *Acer*, *Betula*, *Carpinus*, *Fraxinus*, *Juglans*, *Populus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
87. *Fomitiporia hartigii* (Allesch. & Schnabl) Fiasson & Niemelä, *Abies*, *Larix*, Heilongjiang, Inner Mongolia, Jilin
88. *Fomitiporia punctata* (P. Karst.) Murrill, *Acer*, *Alnus*, *Carpinus*, *Cerasus*, *Padus*, *Phellodendron*, *Populus*, *Prunus*, *Quercus*, *Salix*, *Syringa*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
89. *Fomitopsis cajanderi* (P. Karst.) Kotl. & Pouzar, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
90. *Fomitopsis cf. meliae* (Underw.) Gilb. & Ryvariden, *Tilia*, Jilin
91. *Fomitopsis officinalis* (Vil.) Bondartsev & Singer, *Larix*, Heilongjiang, Jilin
92. *Fomitopsis pinicola* (Sw.) P. Karst., *Abies*, *Acer*, *Alnus*, *Betula*, *Larix*, *Picea*, *Pinus*, *Populus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
93. *Fomitopsis rhodophaea* (Lév.) Imazeki, *Betula*, *Populus*, *Tilia*, *Ulmus*, Jilin
94. *Fomitopsis rosea* (Alb. & Schwein.) P. Karst., *Abies*, *Picea*, *Pinus*, Heilongjiang, Jilin
95. *Funalia cervina* (Schwein.) Y.C. Dai, *Acer*, *Alnus*, *Betula*, *Populus*, *Prunus*, *Quercus*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
96. *Funalia trogii* (Berk.) Bondartsev & Singer, *Betula*, *Carya*, *Chosenia*, *Juglans*, *Populus*, *Salix*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
97. *Ganoderma lipsiense* (Batsch) G.F. Atk., *Acer*, *Betula*, *Populus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
98. *Ganoderma tsugae* Murrill, *Larix*, *Pinus*, Heilongjiang, Jilin
99. *Gelatoporia pannocincta* (Romell) Niemelä, *Betula*, Heilongjiang, Inner Mongolia, Jilin
100. *Gelatoporia subvermispora* (Pilát) Niemelä, *Acer*, *Abies*, *Betula*, *Picea*, *Pinus*, *Populus*, *Quercus*, Heilongjiang, Jilin, Liaoning
101. *Gloeophyllum abietinum* (Bull.) P. Karst., *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin
102. *Gloeophyllum carbonarium* (Berk. & M.A. Curtis) Ryvariden, *Abies*, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
103. *Gloeophyllum odoratum* (Wulfen) Imazeki, angiosperm, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
104. *Gloeophyllum protractum* (Fr.) Imazeki, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia
105. *Gloeophyllum sepiarium* (Wulfen) P. Karst., *Abies*, *Larix*, *Picea*, Heilongjiang, Inner Mongolia, Jilin
106. *Gloeophyllum trabeum* (Pers.) Murrill, *Acer*, *Betula*, *Larix*, *Pinus*, *Populus*, *Quercus*, *Salix*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
107. *Gloeoporus dichrous* (Fr.) Bres., *Acer*, *Alnus*, *Betula*, *Larix*, *Populus*, *Prunus*, *Quercus*, *Salix*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
108. *Gloeoporus taxicola* (Pers.) Gilb. & Ryvariden, *Larix*, *Picea*, Heilongjiang, Inner Mongolia
109. *Grifola frondosa* (Dicks.) Gray, *Quercus*, Heilongjiang, Jilin
110. *Hapalopilus rutilans* (Pers.) P. Karst., *Betula*, *Pinus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
111. *Haploporus odoratus* (Sommerf.) Bondartsev & Singer, *Acer*, *Quercus*, *Salix*, *Syringa*, Heilongjiang, Jilin, Liaoning
112. *Haploporus subtrameteus* (Pilát) Y.C. Dai & Niemelä, *Acer*, Liaoning

113. *Heterobasidion orientale* Tokuda, T. Hatt. & Y.C. Dai, *Abies*, *Larix*, *Pinus*, Heilongjiang, Jilin, Liaoning
114. *Heterobasidion parviporum* Niemelä & Korhonen, *Abies*, *Larix*, *Picea*, *Pinus*, *Tilia*, Jilin
115. *Hyphodontia flavipora* (Cooke) Sheng H. Wu, *Acer*, *Betula*, *Carya*, *Celtis*, *Chosenia*, *Juglans*, *Larix*, *Maackia*, *Padus*, *Picea*, *Pinus*, *Populus*, *Prunus*, *Quercus*, *Robinia*, *Salix*, *Syringa*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
116. *Hyphodontia latitans* (Bourdot & Galzin) Ginns & M.N.L. Lefebvre, *Fraxinus*, *Pinus*, *Populus*, *Quercus*, Inner Mongolia, Jilin, Liaoning
117. *Hyphodontia paradoxa* (Schrad.) Langer & Vesterh., *Corylus*, *Picea*, *Quercus*, Heilongjiang, Jilin
118. *Hyphodontia radula* (Pers.) Langer & Vesterh., *Acer*, *Betula*, Heilongjiang, Jilin
119. *Inocutis rheades* (Pers.) Fiasson & Niemelä, *Populus*, Heilongjiang, Inner Mongolia, Jilin
120. *Inonotopsis exilispora* (Y.C. Dai & Niemelä) Y.C. Dai, *Quercus*, Liaoning
121. *Inonotopsis subiculosa* (Peck) Parmasto, *Abies*, *Larix*, Jilin
122. *Inonotus andersonii* (Ellis & Everh.) Černý, *Quercus*, Heilongjiang
123. *Inonotus hispidus* (Bull.) P. Karst., *Fraxinus*, *Juglans*, *Populus*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
124. *Inonotus obliquus* (Ach. ex Pers.) Pilát, *Betula*, Heilongjiang, Inner Mongolia, Jilin
125. *Inonotus pruinosus* Bondartsev, *Salix*, Liaoning
126. *Inonotus radiatus* (Sowerby) P. Karst, *Acer*, *Alnus*, *Betula*, *Corylus*, *Populus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
127. *Irpex hydroides* Y.W. Lim & H.S. Jung, *Acer*, *Quercus*, Heilongjiang, Jilin
128. *Irpex lacteus* (Fr.) Fr. s. l., *Acer*, *Alnus*, *Betula*, *Carya*, *Fraxinus*, *Juglans*, *Larix*, *Maackia*, *Padus*, *Pinus*, *Populus*, *Prunus*, *Quercus*, *Robinia*, *Salix*, *Syringa*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
129. *Ischnoderma benzoinum* (Wahlenb.) P. Karst., *Abies*, *Larix*, *Picea*, *Pinus*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin
130. *Ischnoderma resinosum* (Fr.) P. Karst., *Acer*, *Betula*, *Quercus*, Heilongjiang, Jilin
131. *Jahnoporus hirtus* (Cooke) Nuss, *Picea*, Jilin
132. *Junghuhnia collabens* (Fr.) Ryvarden, *Abies*, *Acer*, *Picea*, *Pinus*, *Tilia*, Heilongjiang, Jilin
133. *Junghuhnia fimbriatella* (Peck) Ryvarden, *Abies*, *Acer*, *Populus*, *Quercus*, Heilongjinag, Jilin
134. *Junghuhnia lacera* (P. Karst.) Niemelä & Kinnunen, angiosperm, Heilongjiang
135. *Junghuhnia luteoalba* (P. Karst.) Ryvarden, *Acer*, *Betula*, *Chosenia*, *Populus*, *Quercus*, Heilongjiang, Liaoning
136. *Junghuhnia nitida* (Pers.) Ryvarden, *Acer*, *Actinidia*, *Alnus*, *Betula*, *Chosenia*, *Juglans*, *Maackia*, *Populus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
137. *Junghuhnia pseudoziligiana* (Parmasto) Ryvarden, *Betula*, Heilongjiang, Jilin
138. *Junghuhnia semisupiniformis* (Murrill) Ryvarden, *Populus*, Heilongjiang, Jilin, Liaoning
139. *Laetiporus cremeiporus* Y. Ota & T. Hatt., *Quercus*, Jilin, Liaoning
140. *Laetiporus montanus* Cerný ex Tomšovský & Jankovský, *Larix*, Heilongjiang, Inner Mongolia, Jilin
141. *Lenzites acutus* Berk., *Acer*, *Betula*, *Populus*, *Tilia*, Heilongjiang, Jilin
142. *Lenzites betulina* (L.) Fr., *Acer*, *Alnus*, *Betula*, *Fraxinus*, *Juglans*, *Populus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
143. *Leptoporus mollis* (Pers.) Quél., *Picea*, Heilongjiang
144. *Leucophellinus irpicoides* (Pilát) Bondartsev & Singer, *Acer*, *Betula*, *Tilia*, Heilongjiang, Jilin, Liaoning
145. *Megasporoporia subcavernulosa* Y.C. Dai & Sheng H. Wu, gymnosperm, Heilongjiang
146. *Melanoporia castanea* (Imazeki) T. Hatt. & Ryvarden, *Quercus*, Heilongjiang, Jilin, Liaoning
147. *Meripilus giganteus* (Pers.) P. Karst., *Abies*, Jilin
148. *Microporus subaffinis* (Lloyd) Imazeki, *Carpinus*, Liaoning

149. *Nigroporus ussuriensis* (Bondartsev & Ljub.) Y.C. Dai & Niemelä, *Quercus*, Heilongjiang, Jilin
150. *Oligoporus balsameus* (Peck) Gilb. & Ryvarden, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
151. *Oligoporus floriformis* (Quél.) Gilb. & Ryvarden, *Picea*, *Pinus*, Inner Mongolia, Jilin, Liaoning
152. *Oligoporus lowei* (Pilát) Gilb. & Ryvarden, *Pinus*, *Picea*, Heilongjiang, Jilin
153. *Oligoporus obductus* (Berk.) Gilb. & Ryvarden, *Abies*, ground in forest of gymnosperm, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
154. *Oligoporus rennyi* (Berk. & Broome) Donk, *Pinus*, Heilongjiang
155. *Oligoporus sericeomollis* (Romell) Bondartseva, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
156. *Onnia leporina* (Fr.) H. Jahn, *Abies*, *Picea*, Heilongjiang, Jilin
157. *Onnia tomentosa* (Fr.) P. Karst., ground, *Picea*, Heilongjiang, Inner Mongolia, Jilin
158. *Onnia triquetra* (Lenz) Imazeki, *Abies*, Jilin
159. *Oxyporus bucholtzii* (Bondartsev & Ljub.) Y.C. Dai & Niemelä, *Acer*, Jilin
160. *Oxyporus corticola* (Fr.) Ryvarden, *Abies*, *Acer*, *Betula*, *Fraxinus*, *Larix*, *Maackia*, *Phellodondron*, *Picea*, *Pinus*, *Populus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
161. *Oxyporus ginkgonis* Y.C. Dai, *Populus*, Liaoning
162. *Oxyporus latemarginatus* (Durieu & Mont.) Donk, *Salix*, Liaoning
163. *Oxyporus obducens* (Pers.) Donk, *Betula*, *Juglans*, *Populus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
164. *Oxyporus populinus* (Schumach.) Donk, *Acer*, *Alnus*, *Betula*, *Juglans*, *Fraxinus*, *Populus*, *Quercus*, *Salix*, *Ulmus*, Heilongjiang, Jilin, Liaoning
165. *Oxyporus sinensis* X.L. Zeng, *Populus*, *Tilia*, Jilin
166. *Parmastomyces mollissimus* (Maire) Pouzar, *Abies*, *Betula*, *Larix*, *Picea*, *Pinus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
167. *Parmastomyces taxi* (Bondartsev) Y.C. Dai & Niemelä, *Larix*, Jilin
168. *Perenniporia japonica* (Yasuda) T. Hatt. & Ryvarden, *Ulmus*, *Tilia*, Jilin, Liaoning
169. *Perenniporia maackiae* (Bondartsev & Ljub.) Parmasto, *Betula*, *Maackia*, *Padus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
170. *Perenniporia medulla-panis* (Jacq.) Donk, *Abies*, *Juglans*, *Prunus*, *Quercus*, Jilin, Liaoning
171. *Perenniporia minor* Y.C. Dai & H.X. Xiong, *Acer*, Heilongjiang, Jilin, Liaoning
172. *Perenniporia narymica* (Pilát) Pouzar, *Betula*, *Pinus*, *Populus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
173. *Perenniporia ochroleuca* (Berk.) Ryvarden, *Alnus*, *Maackia*, *Quercus*, Heilongjiang, Jilin, Liaoning
174. *Perenniporia ohiensis* (Berk.) Ryvarden, angiosperm, Liaoning
175. *Perenniporia pyricola* Y.C. Dai, *Pyrus*, Liaoning
176. *Perenniporia robiniophila* (Murrill) Ryvarden, *Robinia*, Liaoning
177. *Perenniporia subacida* (Peck) Donk, *Abies*, *Corylus*, *Juglans*, *Larix*, *Picea*, *Pinus*, *Quercus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
178. *Perenniporia tenuis* (Schw.) Ryvarden, *Larix*, Jilin
179. *Perenniporia truncatospora* (Lloyd) Ryvarden, *Pyrus*, Liaoning
180. *Phaeolus schweinitzii* (Fr.) Pat., *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
181. *Phellinidium aciferum* Y.C. Dai, *Quercus*, *Ulmus*, Jilin
182. *Phellinidium ferrugineofuscum* (P. Karst.) Fiasson & Niemelä, *Abies*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
183. *Phellinidium fragrans* (M.J. Larsen & Lombard) Nuss, *Acer*, Jilin
184. *Phellinidium sulphurascens* (Pilát) Y.C. Dai, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
185. *Phellinus baumii* Pilát, *Acer*, *Alnus*, *Syringa*, Heilongjiang, Jilin, Liaoning
186. *Phellinus chinensis* Pilát, *Carya*, *Juglans*, *Populus*, Liaoning
187. *Phellinus conchatus* (Pers.) Quél., *Salix*, Jilin
188. *Phellinus ferreus* (Pers.) Bourdot & Galzin, *Acer*, *Alnus*, *Betula*, *Corylus*, *Fraxinus*, *Populus*, *Tilia*, Heilongjiang, Jilin, Liaoning
189. *Phellinus ferruginosus* (Schr.) Pat., *Acer*, *Alnus*,

- Juglans*, *Maackia*, *Populus*, *Quercus*, *Syringa*, *Tilia*, *Ulmus*, Heilongjiang, Jilin, Liaoning
190. *Phellinus gilvus* (Schwein.) Pat., *Acer*, *Betula*, *Carpinus*, *Carya*, *Padus*, *Prunus*, *Quercus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
191. *Phellinus igniarius* (L.) Quél. s. l., *Acer*, *Betula*, *Carpinus*, *Juglans*, *Populus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
192. *Phellinus laevigatus* (Fr.) Bourdot & Galzin, *Betula*, Heilongjiang, Jilin, Liaoning
193. *Phellinus laricis* (Jaczewski in Pilát) Pilát, *Larix*, Heilongjiang, Inner Mongolia
194. *Phellinus lonicericola* Parmasto, *Lonicera*, Heilongjiang, Jilin, Liaoning
195. *Phellinus lundellii* Niemelä, *Betula*, Heilongjiang, Jilin, Liaoning
196. *Phellinus mori* Y.C. Dai & B.K. Cui, *Morus*, Heilongjiang
197. *Phellinus nigrolimitatus* (Romell) Bourdot & Galzin, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
198. *Phellinus pini* (Brot.) A. Ames, *Pinus*, Heilongjiang, Jilin
199. *Phellinus tremulae* (Bondartsev) Bondartsev & Borisov, *Populus*, Heilongjiang, Jilin, Liaoning
200. *Phellinus tuberculosus* (Baumg.) Niemelä, *Amygdalus*, *Prunus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
201. *Phellinus vaninii* Ljub., *Populus*, Heilongjiang, Jilin
202. *Phellinus yamanoi* (Imazeki) Parmasto, *Picea*, Heilongjiang, Inner Mongolia, Jilin
203. *Phylloporia ribis* (Schumach.) Ryvarden, *Crataegus*, Liaoning
204. *Physisporinus rivulosus* (Berk. & M.A. Curtis) Ryvarden, *Pinus*, Heilongjiang, Jilin
205. *Physisporinus sanguinolentus* (Alb. & Schwein.) Pilát, *Abies*, *Betula*, *Fraxinus*, Heilongjiang, Jilin, Liaoning
206. *Physisporinus vitreus* (Pers.) P. Karst., *Betula*, *Fraxinus*, *Populus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
207. *Physisporinus xylostromatoides* (Bres.) Y.C. Dai, *Pinus*, Liaoning
208. *Piloporia sajanensis* (Parmasto) Niemelä, *Pinus*, Jilin
209. *Piptoporus betulinus* (Bull.) P. Karst., *Betula*, Heilongjiang, Inner Mongolia, Jilin
210. *Piptoporus soloniensis* (Dubois) Pilát, *Quercus*, Heilongjiang, Jilin, Liaoning
211. *Polyporus arcularius* (Batsch) Fr., *Abies*, *Acer*, *Padus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin
212. *Polyporus badius* (Pers.) Schwein., *Acer*, *Alnus*, *Betula*, *Carpinus*, *Fraxinus*, *Populus*, *Quercus*, *Salix*, *Sorbus*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
213. *Polyporus brumalis* (Pers.) Fr., *Acer*, *Betula*, *Quercus*, *Tilia*, Heilongjiang, Jilin
214. *Polyporus ciliatus* Fr., *Alnus*, *Betula*, *Juglans*, *Tilia*, Heilongjiang, Jilin, Liaoning
215. *Polyporus elegans* (Bulliard) Trog, *Chosenia*, *Lonicera*, *Ulmus*, Heilongjiang, Liaoning
216. *Polyporus hemicapnodes* Berk. & Broome, *Acer*, *Alnus*, *Populus*, *Salix*, Heilongjiang, Jilin
217. *Polyporus mori* (Pollini) Fr., *Abies*, *Acer*, *Alnus*, *Betula*, *Juglans*, *Maackia*, *Phellodendron*, *Picea*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
218. *Polyporus pseudobetulinus* (Murashk. ex Pilát) Thorn *et al.*, *Populus*, Jilin
219. *Polyporus rhizophilus* (Pat.) Sacc., grass, Inner Mongolia
220. *Polyporus squamosus* (Huds.) Fr., *Acer*, *Betula*, *Populus*, Heilongjiang, Inner Mongolia, Liaoning
221. *Polyporus tubaeformis* (P. Karst.) Ryvarden & Gilb., *Abies*, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
222. *Polyporus ulmi* (Bondartsev & Ljub.) Vassilk., *Chosenia*, Heilongjiang, Inner Mongolia
223. *Polyporus umbellatus* (Pers.) Fr., *Quercus*, Jilin
224. *Polyporus varius* (Pers.) Fr., *Padus*, *Populus*, *Quercus*, *Salix*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
225. *Poriodontia subvinosa* Parmasto, *Abies*, *Picea*, Heilongjiang, Jilin
226. *Postia alni* Niemelä & Vampola, *Acer*, *Alnus*, *Betula*, *Chosenia*, *Fraxinus*, *Populus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning

227. *Postia amurensis* Y.C. Dai & Penttilä, *Acer*, *Betula*, *Larix*, Heilongjiang, Inner Mongolia, Liaoning
228. *Postia caesia* (Schrad.) P. Karst., *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
229. *Postia calcarea* Y.L. Wei & Y.C. Dai, *Pinus*, Liaoning
230. *Postia ceriflua* (Berk. & M.A. Curtis) Jülich, *Picea*, *Pinus*, Heilongjiang, Jilin
231. *Postia fragilis* (Fr.) Jülich, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
232. *Postia gloeocystidia* Y.L. Wei & Y.C. Dai, *Larix*, Inner Mongolia
233. *Postia guttulata* (Peck) Jülich, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin, Liaoning
234. *Postia hibernica* (Berk. & Broome) Jülich, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
235. *Postia lactea* (Fr.) P. Karst., *Betula*, *Populus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
236. *Postia lateritia* Renvall, *Pinus*, Heilongjiang
237. *Postia leucomallella* (Murrill) Jülich, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Jilin
238. *Postia pileata* (Parmasto) Y.C. Dai & Renvall, *Betula*, *Populus*, *Salix*, *Tilia*, Heilongjiang, Jilin, Liaoning
239. *Postia rancida* (Bres.) M.J. Larsen & Lombard, *Abies*, *Pinus*, Heilongjiang
240. *Postia simanii* (Pilát) Jülich, *Abies*, angiosperm, Jilin, Liaoning
241. *Postia stiptica* (Pers.) Jülich, angiosperm, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
242. *Postia subundosa* Y.L. Wei & Y.C. Dai, *Picea*, Heilongjiang
243. *Postia tephroleuca* (Fr.) Jülich, *Larix*, *Picea*, Heilongjiang, Inner Mongolia, Liaoning
244. *Postia undosa* (Peck) Jülich, *Abies*, *Larix*, *Picea*, *Pinus*, *Populus*, *Quercus*, Heilongjiang, Jilin, Liaoning
245. *Pouzaroporia subrufa* (Ellis & Dearn.) Vampola, *Acer*, *Betula*, *Populus*, Heilongjiang, Inner Mongolia, Jilin
246. *Protomerulius caryae* (Schwein.) Ryvarden, *Acer*, *Betula*, *Fraxinus*, *Populus*, *Quercus*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
247. *Pycnoporellus fulgens* (Fr.) Donk, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
248. *Pycnoporus cinnabarius* (Jacq.) P. Karst., *Betula*, *Populus*, *Tilia*, Heilongjiang, Inner Mongolia, Jilin
249. *Pycnoporus sanguineus* (L.) Murrill, *Betula*, *Prunus*, *Quercus*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
250. *Pyrrhoderma scaura* (Lloyd) Ryvarden, *Acer*, *Alnus*, *Betula*, *Juglans*, *Populus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
251. *Rhodonía placenta* (Fr.) Niemelä *et al.*, *Abies*, *Larix*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
252. *Rigidoporus crocatus* (Pat.) Ryvarden, *Abies*, *Acer*, *Betula*, *Larix*, *Picea*, *Pinus*, *Populus*, *Quercus*, *Tilia*, Heilongjiang, Jilin, Liaoning
253. *Rigidoporus eminens* Y.C. Dai, *Acer*, *Betula*, *Fraxinus*, *Juglans*, *Phellodondron*, *Populus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*, Heilongjiang, Inner Mongolia, Jilin, Liaoning
254. *Sarcoporia salmonicolor* (Berk. & M.C. Curtis) Pouzar, *Larix*, *Pinus*, Heilongjiang, Inner Mongolia, Liaoning
255. *Schizopora cystidiata* A.D. David & Rajchenb., angiosperm, Jilin
256. *Sistotrema confluens* Pers., *Larix*, Inner Mongolia
257. *Skeletocutis alutacea* (J. Lowe) Jean Keller, *Acer*, Liaoning
258. *Skeletocutis amorpha* (Fr.) Kotl. & Pouzar, *Larix*, *Picea*, Heilongjiang, Inner Mongolia, Jilin
259. *Skeletocutis biguttulata* (Romell) Niemelä, *Abies*, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
260. *Skeletocutis brevispora* Niemelä, *Picea*, *Pinus*, Heilongjiang, Inner Mongolia, Jilin
261. *Skeletocutis carneogrisea* A. David, *Abies*, *Larix*, *Picea*, Heilongjiang, Inner Mongolia, Jilin
262. *Skeletocutis kuehneri* A. David, *Abies*, *Pinus*, Heilongjiang, Jilin
263. *Skeletocutis lilacina* A. David & Jean Keller, *Larix*, *Picea*, Heilongjiang
264. *Skeletocutis nivea* (Jungh.) Jean Keller, *Acer*, *Alnus*, *Betula*, *Carya*, *Corylus*, *Fraxinus*, *Maackia*,

- Populus, Quercus, Salix, Tilia, Ulmus*,
Heilongjiang, Inner Mongolia, Jilin, Liaoning
265. *Skeletocutis ochroalba* Niemelä, *Larix*,
Heilongjiang
266. *Skeletocutis odora* (Sacc.) Ginns, *Abies, Larix*,
Picea, Pinus, Heilongjiang, Jilin
267. *Skeletocutis papyracea* A. David, *Picea*,
Heilongjiang
268. *Skeletocutis perennis* Ryvarden, *Quercus*, Jilin
269. *Skeletocutis stellae* (Pilát) Jean Keller, *Larix, Picea*,
Pinus, Heilongjiang, Jilin
270. *Skeletocutis subvulgaris* Y.C. Dai, *Abies, Picea*,
Pinus, Heilongjiang, Inner Mongolia
271. *Spongipellis delectans* (Peck) Murrill, *Quercus*,
Heilongjiang, Inner Mongolia, Jilin, Liaoning
272. *Spongipellis spumeus* (Sowerby) Pat., *Acer, Alnus*,
Fraxinus, Populus, Quercus, Tilia, Ulmus,
Heilongjiang, Inner Mongolia, Jilin, Liaoning
273. *Stromatoscypha fimbriata* (Pers.) Donk, *Abies*,
Pinus, Tilia, Jilin
274. *Trametes conchifer* (Schwein.) Pilát, *Acer*,
Chosenia, Ulmus, Heilongjiang, Inner Mongolia,
Jilin
275. *Trametes gibbosa* (Pers.) Fr., *Acer, Populus*,
Quercus, Tilia, Heilongjiang, Jilin, Liaoning
276. *Trametes hirsuta* (Wulfen) Pilát, *Acer, Alnus*,
Betula, Chosenia, Juglans, Maackia, Padus,
Populus, Prunus, Quercus, Salix, Tilia, Ulmus,
Heilongjiang, Inner Mongolia, Jilin, Liaoning
277. *Trametes ochracea* (Pers.) Gilb. & Ryvarden, *Acer*,
Alnus, Betula, Fraxinus, Populus, Prunus, Quercus,
Salix, Tilia, Heilongjiang, Inner Mongolia, Jilin,
Liaoning
278. *Trametes pubescens* (Schumach.) Pilát, *Acer*,
Alnus, Betula, Carpinus, Fraxinus, Juglans,
Populus, Prunus, Salix, Ulmus, Heilongjiang, Inner
Mongolia, Jilin, Liaoning
279. *Trametes suaveolens* (L.) Fr., *Acer, Chosenia*,
Fraxinus, Populus, Salix, Tilia, Heilongjiang, Inner
Mongolia, Jilin, Liaoning
280. *Trametes subsuaveolens* B.K. Cui & Y.C. Dai,
Picea, Inner Mongolia
281. *Trametes velutina* (Pers.) G. Cunn., *Acer, Alnus*,
Betula, Populus, Salix, Tilia, Ulmus, Heilongjiang,
Inner Mongolia, Jilin, Liaoning
282. *Trametes versicolor* (L.) Lloyd, *Acer, Betula*,
Carya, Crataegus, Fraxinus, Larix, Lonicera,
Juglans, Pinus, Populus, Prunus, Quercus, Salix,
Tilia, Heilongjiang, Inner Mongolia, Jilin, Liaoning
283. *Trechispora candidissima* (Schwein.) Bondartsev &
Singer, *Abies, Pinus, Populus, Quercus*,
Heilongjiang, Jilin
284. *Trechispora hymenocystis* (Berk. & Broome) K.H.
Larss., *Abies*, angiosperm, *Pinus, Picea*,
Heilongjiang, Jilin
285. *Trechispora mollusca* (Pers.) Liberta, *Abies*,
Cerasus, Larix, Picea, Pinus, Populus, Quercus,
Heilongjiang, Inner Mongolia, Jilin, Liaoning
286. *Trichaptum abietinum* (Pers.) Ryvarden, *Abies*,
Larix, Picea, Pinus, Heilongjiang, Jilin, Liaoning
287. *Trichaptum fuscoviolaceum* (Ehrenb.) Ryvarden,
Abies, Larix, Picea, Pinus, Heilongjiang, Inner
Mongolia, Jilin
288. *Trichaptum laricinum* (P. Karst.) Ryvarden, *Larix*,
Pinus, Heilongjiang, Inner Mongolia, Jilin
289. *Trichaptum pargamentum* (Fr.) G. Cunn., *Betula*,
Quercus, Heilongjiang, Inner Mongolia, Jilin
290. *Trichaptum polycystidiatum* (Pilát) Y.C. Dai,
Quercus, Heilongjiang, Jilin
291. *Tyromyces canadensis* Overh. ex J. Lowe, *Larix*,
Pinus, Heilongjiang, Jilin
292. *Tyromyces chioneus* (Fr.) P. Karst., *Acer, Betula*,
Populus, Quercus, Tilia, Heilongjiang, Inner
Mongolia, Jilin, Liaoning
293. *Tyromyces fumidiceps* G.F. Atk., angiosperm,
Heilongjiang
294. *Tyromyces kmetii* (Bres.) Bondartsev & Singer,
Betula, Populus, Quercus, Heilongjiang, Inner
Mongolia, Jilin, Liaoning
295. *Tyromyces sibiricus* Penzina & Ryvarden, *Acer*,
Jilin
296. *Wolfiporia curvispora* Y.C. Dai, *Pinus*, Jilin
297. *Wolfiporia dilatohypha* Ryvarden & Gilb., *Betula*,
Quercus, Heilongjiang, Jilin
298. *Wrightoporia borealis* Y.C. Dai, *Abies, Pinus*, Jilin
299. *Wrightoporia lenta* (Oveh. & J. Lowe) Pouzar,
Abies, Jilin
300. *Wrightoporia luteola* B.K. Cui & Y.C. Dai,
angiosperm, Liaoning

2.3 Taxonomy

Perenniporia pyricola Y.C. Dai & B.K. Cui, sp. nov.

Fig. 2, 3

Mycobank No. MB 516682

Carpophorum perenne, resupinatum. Superficies pororum crenea vel mellea, pori rotundi vel angulati, 3–5 per mm. Systema hypharum dimiticum, hyphae generativae fibulatae, hyphae scaleticae dextrinoideae, hyphae scaleticae subiculi 2–4.2µm in diam. Sporae hyalinae, ellipsoideae vel truncatae, dextrinoideae, CB+, 6.3–7.6 × 4.8–6.5µm.

Type. — China. Liaoning Province, Anshan, Qianshan Park, on living tree of *Pyrus*, 5.VIII.2008 Dai 10265 (holotype in BJFC, isotype in IFP).

Etymology. — *Pyricola* (Lat.): *Pyrus*, referring to the host tree genus.

Fruitbody. — Basidiocarps perennial, resupinate, adnate, without odour or taste when fresh, becoming hard corky upon drying, up to 20cm long, 8cm wide, and 1.2cm thick at centre. Sterile margin cream to cream buff, up to 1mm wide. Pore surface cream to cinnamon-buff when fresh, pale yellowish buff upon drying; pores round to angular, 3–5 per mm; dissepiments thin, entire. Subiculum thin, cream buff, hard corky, azonate, up to 0.2mm thick. Tubes concolorous with the pore surface, hard corky, up to 1cm long, distinctly stratified.

Hyphal structure. — Hyphal system dimitic; generative hyphae with clamp connections; skeletal hyphae dextrinoid, moderately CB+, tissue unchanged in KOH.

Subiculum. — Generative hyphae infrequent, hyaline, thin-walled, rarely branched, 1.8–3.5µm in diam.; skeletal hyphae dominant, hyaline, thick-walled with a wide to narrow lumen, occasionally branched, flexuous, interwoven, 2–4.2µm in diam.

Tubes. — Generative hyphae infrequent, hyaline, thin-walled, rarely branched, 1.5–3µm in diam.; skeletal hyphae dominant, hyaline, thick-walled with a wide to narrow lumen, occasionally branched, flexuous, interwoven, 1.7–4µm in diam. Cystidia absent; fusoid cystidioles present, 13–19 × 4.5–7µm; basidia clavate, with four sterigmata and a basal clamp connection at the base, 17–26 × 5–8µm; basidioles similar in shape to basidia, but slightly smaller.

Spores. — Basidiospores ellipsoid, usually truncate,

hyaline, thick-walled, smooth, dextrinoid, CB+, (5.8–)6.3–7.6(–8.1) × (4–)4.8–6.5(–7)µm, L = 7.03µm, W = 5.33µm, Q = 1.27–1.35 (n = 90/3).

Additional specimens (paratypes) examined. — China. Liaoning Province, Anshan, Qianshan Park, on living tree of *Pyrus*, 12.VIII.2004 Dai 5785 & 5825 (BJFC & IFP).

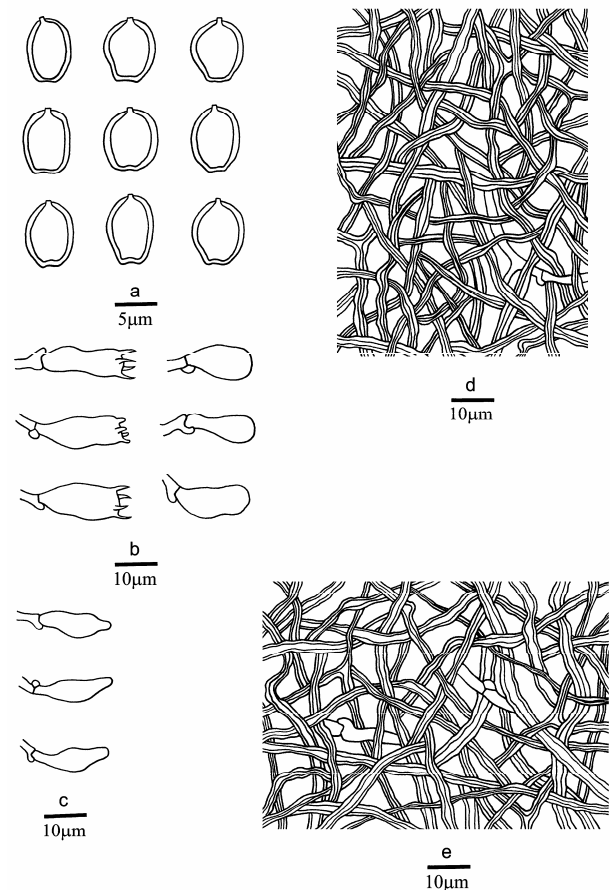


Fig. 2 Microscopic structures of *Perenniporia pyricola* Y.C. Dai & B.K. Cui (drawn from Dai 10265). a: Basidiospores; b: Basidia and basidioles; c: Cystidioles; d: Hyphae from trama; e: Hyphae from subiculum.



Fig. 3 A fresh basidiocarp of *Perenniporia pyricola* Y.C. Dai & B.K. Cui (Photo Dai 5785).

Remarks — *Perenniporia pyricola* is characterized by a perennial growth habit, resupinate basidiocarps, cream to cinnamon-buff pore surface, dextrinoid and moderately cyanophilous skeletal hyphae, thick-walled, ellipsoid, truncate, dextrinoid and cyanophilous basidiospores.

Perenniporia tenuis may be confused with *P. pyricola* by more or less similar macro-morphology, but its pores are more yellowish. In addition, it is readily distinguished from *P. pyricola* by smaller basidiospores ($5.5\text{--}6.5 \times 4.5\text{--}5.5\mu\text{m}$, Dai *et al.* 2002; $5.8\text{--}7.1 \times 3.8\text{--}4.5\mu\text{m}$, Niemelä 2005).

Perenniporia medulla-panis is a rather common species in northern hemisphere (Gilbertson & Ryvarden 1987; Ryvarden & Gilbertson 1994; Núñez & Ryvarden 2001), and it resembles *P. pyricola* by similar colour and pores, but its skeletal hyphae are indextrinoid, and its basidiospores are smaller ($4.5\text{--}5 \times 3.2\text{--}3.8\mu\text{m}$, Dai *et al.* 2002).

Perenniporia rosmarini A. David & Malençon has similar basidiospores ($6.5\text{--}7.5 \times 5.5\text{--}6.5\mu\text{m}$) with *P. pyricola*, but it differs from the latter by having smaller pores (6–7 per mm), indextrinoid skeletal hyphae (Ryvarden & Gilbertson 1994).

***Wrightoporia borealis* Y.C. Dai, sp. nov. Fig. 4, 5**

MycoBank No. MB 516783

Carpophorum, resupinatum, contextum cremeum. Superficies pororum alba vel crenea; pori angulati, 2–4 per mm. Systema hypharum dimiticum, hyphae generativae fibulatae, hyphae skeleticae non vel vix dextrinoideae, hyphae skeleticae subiculi 2–2.5 μm in diam. Gloeocystidia clavata, 31–35 \times 4–6 μm . Sporae ellipsoideae, hyalinae, asperae, amyloideae, 3.9–4.6 \times 3.2–3.8 μm .

Etymology. — *Borealis* (Lat.): northern, referring to boreal forest.

Type. — China. Jilin Province, Changbaishan Nat. Res., on rotten wood of *Abies*, 28.VIII.2005 Dai 7075 (Holotype in IFP, isotype in BJFC).

Fruitbody. — Basidiocarps annual, resupinate, soft when fresh, becoming tough upon drying; about 20cm long, 10cm wide, and 1.2mm thick at center; pore surface white when fresh, become cream to buff-yellow when dry; margin rhizomorphic, white, thinning out, up

to 2mm wide; pores round to angular, 2–4 per mm, dissepiments thin, strongly lacerate with age; subiculum white to cream, soft corky, about 0.2mm thick; tubes concolourous with the pore surface, fibrous-tough, up to 1mm long.

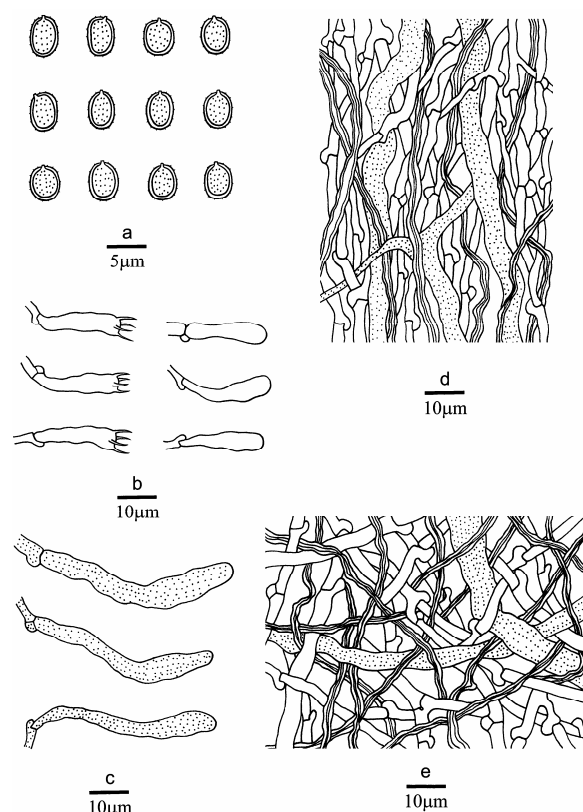


Fig. 4 Microscopic structures of *Wrightoporia borealis* Y.C. Dai (drawn from Dai 7075). a: Basidiospores; b: Basidia and basidioles; c: Gloeocystidia; d: Hyphae from trama; e: Hyphae from subiculum.



Fig. 5 A fresh basidiocarp of *Wrightoporia borealis* Y.C. Dai (Photo Dai 7075).

Hyphal structure. — Hyphal system dimitic; generative hyphae bearing clamp connections; skeletal hyphae CB+, weakly dextrinoid or IKI–; tissue unchanged in KOH.

Subiculum. — Generative hyphae frequent, hyaline, thin-walled, frequently branched, 2–2.8 μm in diam.;

skeletal hyphae common, hyaline, thick-walled with a narrow lumen, rarely strongly flexuous, interwoven, 2—2.5µm in diam., gloeoplerous hyphae occasionally present, 5—9µm in diam.

Tubes. — Generative hyphae frequent, hyaline, thin-walled, moderately branched, 1.8—3µm in diam.; skeletal hyphae thick-walled with a wide to narrow lumen, unbranched, flexuous, 1.6—2.3µm in diam.; gloeoplerous hyphae occasionally present, 5—7µm in diam.; gloeocystidia occasionally present, thin-walled, 29—60 × 4—7µm; basidia clavate, thin-walled, with four sterigmata and a basal clamp connection, 18—25 × 5—6µm; basidioles in shape similar to basidia, but slightly smaller.

Spores. — Basidiospores broadly ellipsoid, hyaline, slightly thick-walled, echinulate, strongly IKI+, CB+, (3.7—)3.9—4.6(—5) × (3—)3.2—3.8(—4.3)µm, L = 4.17µm, W = 3.46µm, Q = 1.18—1.23 (n = 90/3).

Additional specimens (paratypes) examined. — Jilin Prov., Huadian County, Dongxing, on rotten wood of *Abies*, 17.X.1993 Dai 1675 (IFP). Dunhua County, Huangnihe, on rotten stump of *Pinus*, 7.VIII.1997 Dai 2287 (IFP & H).

Remarks. — *Wrightoporia borealis* is rather similar to *W. avellanea* (Bres.) Pouzar, which was originally described from Brazil, and reported in North America (Gilbertson & Ryvarden 1987). The Chinese collections were even treated previously as the latter species (Dai 2000). However, as mentioned by Hattori (2008), collections on coniferous wood in temperate Asia may be a distinct species rather than *W. avellanea*. Some specimens of *W. avellanea* from Brazil and Venezuela were studied, its skeletal hyphae are strongly dextrinoid and its basidiospores are smaller (3—4 × 2.8—3.5µm), and it lacks gloeocystidia. So the Chinese specimens on conifers are distinctly different from *W. avellanea*.

Wrightoporia labyrinthine T. Hatt. was recently described from temperate forest of Japan (Hattori 2008), and its skeletal hyphae are not or weakly dextrinoid, but it differs from *W. borealis* by pale orange to grayish orange pore surface, elongated to daedaleoid pores (1 per mm), and by lacking of gloeocystidia.

Other specimens studied. — *Wrightoporia avellanea*. Brazil, Sao Paulo State, Pargu Est. Fontes do, Ipiranga, 16.I.1987 Ryvarden 24619 (O 13142). Cayo

District, Blue Hole National Park, on deciduous wood, 19.XI.2001 Ryvarden 44334 (O 17707). Venezuela, Estado Amazonas, Yutaje, on dead deciduous wood, 12.VI.1997 Ryvarden 40378 (O 13137).

3 DISCUSSIONS

3.1 Diversity of the species and genera

504 wood-decaying fungi were found in northeastern China. Of them, 60% are polyporoid fungi, and 40% are corticioid species. 605 polypores belonging to 121 genera were recorded in China (Dai 2009), while 300 species in 96 genera were found in northeastern China. This indicates that the polypores growing in the northeastern provinces account for nearly 50% of the total Chinese polypores and 94% of the total Chinese polyporoid genera. Totally 507 corticioid fungi belonging to 152 genera are found in China (unpublished, Dai), while 204 species belonging to 103 genera were found in northeastern provinces, accounting for around 40% and 68% of the total Chinese corticioid species and genera, respectively.

3.2 Diversity of pathogenic species

Aurantiporus fissilis, *Bjerkandera adusta*, *Cerrena unicolor*, *Climacocystis borealis*, *Climacodon septentrionalis*, *Daedaleopsis confragosa*, *Fomes fomentarius*, *Fomitiporia hartigii*, *F. punctata*, *Fomitopsis officinalis*, *F. pinicola*, *Funalia trogii*, *Ganoderma lipsiense*, *G. tsugae*, *Haploporus odoratus*, *Hericium erinaceus*, *Heterobasidion parviporum*, *Inonotus andersonii*, *I. hispidus*, *I. obliquus*, *I. radiatus*, *I. pruinosus*, *Laetiporus cremeiporus*, *L. montanus*, *Leucophellinus irpicoides*, *Melanoporia castanea*, *Onnia leporine*, *O. tomentosa*, *Oxyporus populinus*, *O. sinensis*, *Parmastomyces taxi*, *Perenniporia robiniophila*, *P. subacida*, *Phaeolus schweinitzii*, *Phellinidium sulphurascens*, *Phellinus baumii*, *P. conchatus*, *P. gilvus*, *P. ignarius*, *P. laricis*, *P. lonicericola*, *P. pini*, *P. tremulae*, *P. tuberculosus*, *P. vaninii*, *P. yamanoi*, *Phylloporia ribis*, *Piptoporus betulinus*, *P. soloniensis*, *Polyporus fraxineus*, *P. squamosus*, *Sparassis latifolia*, *Spongipellis delectans*, *S. spumeus*, *Stereum sanguinolentum*, *Trametes suaveolens* and *Tyromyces sibiricus*.

According to the field investigations, the above 57 species could attack living trees, and they are the potential forest pathogens in northeastern China. These

species account for 11% of all the wood-decaying fungi found in the studied area. 102 pathogenic wood-decaying fungi were recorded in China (Dai *et al.* 2007b), 55% of them were recorded in northeastern China.

3.3 Diversity of medicinal fungi

Abortiporus biennis, *Antrodia albida*, *A. xantha*, *Cerrena unicolor*, *Daedalea dickinsii*, *Daedaleopsis tricolor*, *Fomes fomentarius*, *Fomitiporia hartigii*, *F. punctata*, *Fomitopsis officinalis*, *F. pinicola*, *F. rosea*, *Ganoderma lipsiense*, *G. tsugae*, *Gloeophyllum sepiarium*, *G. trabeum*, *Gloeostereum incarnatum*, *Grifola frondosa*, *Hericium coralloides*, *H. erinaceus*, *Hydnum repandum*, *Inocutis rheades*, *Inonotus hispidus*, *I. obliquus*, *I. radiatus*, *Irpex lacteus*, *Ischnoderma resinosum*, *Lenzites betulina*, *Oligoporus obductus*, *Oxyporus corticola*, *Perenniporia robiniophila*, *P. subacida*, *Phaeolus schweinitzii*, *Phellinus baumii*, *P. conchatus*, *P. gilvus*, *P. igniarius*, *P. laevigatus*, *P. laricis*, *P. lonicericola*, *P. lundellii*, *P. pini*, *P. tremulae*, *P. tuberculosus*, *P. vaninii*, *P. yamanoi*, *Phylloporia ribis*, *Piptoporus betulinus*, *Polyporus arcularius*, *P. elegans*, *P. mori*, *P. squamosus*, *P. umbellatus*, *P. varius*, *Postia guttulata*, *P. lactea*, *Pycnoporus cinnabarinus*, *P. sanguineus*, *Sparassis latifolia*, *Stereum hirsutum*, *Trametes gibbosa*, *T. hirsute*, *T. pubescens*, *T. versicolor*, *Trichaptum abietinum*, *T. pargamentum*, *T. fuscoviolaceum*, *Wolfiporia cocos* and *Xylobolus frustulatus*.

The above 69 species are used as herb medicines, and they share 14% of all the wood-decaying fungi found in northeastern China. 473 medicinal fungi were recorded in China (Dai & Yang 2008), and 12% of which have found in northeastern China. The most important species are *Inonotus obliquus*, *Phellinus baumii*, *P. igniarius* and *P. vaninii*.

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