

Polypores from eastern Xizang (Tibet), western China

Yu-Cheng Dai¹, Chang-Jun Yu¹ & Han-Chen Wang^{1,2}

¹ Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang 110016, China

² Graduate School, Chinese Academy of Sciences, Beijing 100039, China

Received 10 Jan. 2006, revised version received 20 Mar. 2006, accepted 23 Mar. 2006

Dai, Y. C., Yu, C. J. & Wang, H. C. 2007: Polypores from eastern Xizang (Tibet), western China. — *Ann. Bot. Fennici* 44: 135–145.

A field expedition to study wood-inhabiting fungi in eastern Xizang Autonomous Region (Tibet), western China, was made in summer of 2004, and based on materials collected during the expedition and some herbarium specimens 154 poroid aphylloraceous fungi were identified. This paper gives a checklist of our results, and most of the species are here reported for the first time from Xizang. Substrates and collecting data of each species are supplied in the checklist. *Ceriporiopsis egula* C.J. Yu & Y.C. Dai, *Heterobasidion linzhiense* Y.C. Dai & Korhonen and *Polyporus subvarius* C.J. Yu & Y.C. Dai are new to science, and illustrated in line drawings. Species diversity of polypores in eastern Xizang is very high. The major component of the eastern Xizang polypore flora is widely distributed circumpolar, temperate and boreal species.

Key words: Basidiomycota, checklist, taxonomy, wood-inhabiting fungi

Introduction

Although Berkeley (1851) made a pioneer study on wood-decaying fungi from Himalaya area in the 19th century, the more important mycological reports concerning wood-inhabiting fungi in the area have been published during last 50 years (Imazeki *et al.* 1966, Rattan 1977, Ryvar den 1977, Hjortstam & Ryvar den 1984, Adhikari 2000, Hattori *et al.* 2002). Several general books on macrofungi from Tibetan Plateau have been published (Anonymous 1983, 1986, 1995, Mao *et al.* 1993), but a limited number of species of Aphyllorales were recorded in these publications, and the knowledge on wood-inhabiting fungi in the area is still fragmentary. In the course of an expedition in July to August of 2004 to eastern Xizang Autonomous Region (Tibet), the present authors collected about 550 speci-

mens of wood-inhabiting fungi. This paper deals with the poroid Aphyllorales based mostly on the collected material; in addition, some material from the same area collected by other mycologists were studied. The following is an annotated checklist of polypores found in eastern Xizang.

Study areas

Eastern Xizang is one of the most important forest areas in west China, and our specimens were collected from seven forests (Fig. 1). The altitude of these forests varies from 2800 to 4200 m, and the collecting localities were either in cool temperate forests or boreal forests. The main gymnosperm genera are *Abies*, *Larix*, *Picea*, *Pinus*, *Cupressus* and *Sabina*, and the common angiosperm tree genera are *Acer*, *Betula*, *Populus*, *Quercus* and

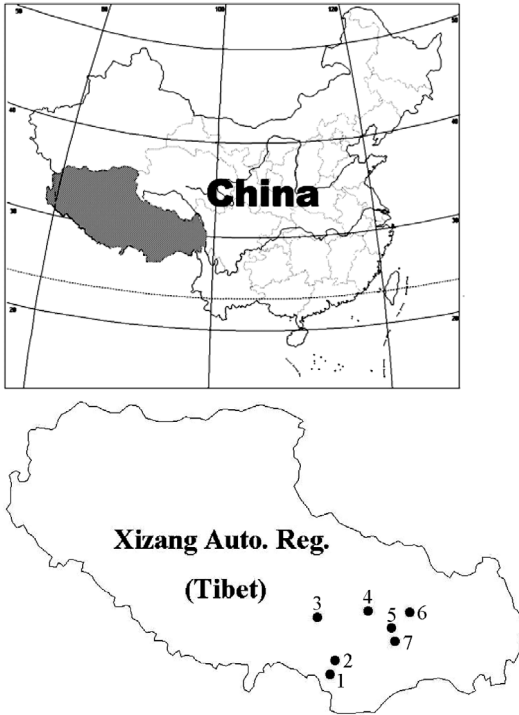


Fig. 1. The collecting localities in Xizang: (1) Le, Cuona County; (2) Mama, Cuona County; (3) Lhasa; (4) Cuogao, Gongbujiangda County; (5) Bayi, Linzhi County; (6) Sejilashan, Linzhi County; (7) Milin, Milin County.

Rhododendron. In addition, *Salix*, *Juglans*, *Lonicera*, *Sorbus* and *Ulmus* are occasionally seen. The most important trees in our studied areas are *Abies forrestii* var. *smithii*, *Larix griffithiana*, *Picea likiangensis* var. *linzhiensis*, *Pinus densata* and *Quercus aquifolioides*. Most of the investigated areas are virgin forests, and some in a semi-natural state because of the human influence.

Material and methods

The studied material is deposited at the Herbarium of the Institute of Applied Ecology, Chinese Academy of Sciences (IFP), and some duplicates of specimens are preserved at the herbarium of Institute of Microbiology, Chinese Academy of Sciences (HMAS), and the Botanical Museum, University of Helsinki (H), Finland. In addition, 124 specimens collected from Xizang by other mycologists were studied, and they are pre-

served either at the Mycological Herbarium of the Institute of Microbiology, Chinese Academy of Sciences (HMAS) or at the Herbarium of the Botanical Institute of Kunming, Chinese Academy of Sciences (HKAS).

The microscopic methods used in the study are as presented by Dai (1999b). In the text the following abbreviations are used: L = mean spore length (arithmetical mean of all spores measured), W = mean spore width, 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. In presenting the variation in the size of spores (or other structures), 5% of the measurements were excluded from each end of the range, these measurements being given in parentheses. IKI stands for Melzer's reagent, KOH for 5% potassium hydroxide, and CB is the abbreviation of Cotton Blue. CB+ means cyanophilous and CB- acyanophilous; IKI- means both inamyloid and indextrinoid. Colour terms mostly follow Rayner (1970) and Petersen (1996).

An alphabetical checklist is given of polypores found in this investigation, and the authors of scientific names are according to the second version of Authors of Fungal Names (<http://www.indexfungorum.org/AuthorsOfFungal-Names.htm>). Substrate and collecting data are supplied after the name of each polypore, and the hosts are listed alphabetically. In the case of the same host tree, they are arranged in the order: living tree, dead tree, fallen branch, fallen trunk, rotten wood, charred wood, stump, and root. The concept of polypores used here is in a wide sense, including the Polyporaceae, Ganodermataceae, and poroid species in the Hymenochaetaceae and Corticiaceae.

Results

Checklist

Anomoporia bombycina (Fr.) Pouzar, rotten wood of *Picea*, Dai 5674; fallen trunk of *Pinus*, Yu 107; rotten wood of *Pinus*, Dai 5557a, 5564, 5576, 5578; charred wood of *Pinus*, Dai 5657.

Anomoporia flavissima Niemelä, rotten wood of *Pinus*, Dai 5568; rotten stump of *Quercus*, Dai 5533.

- Antrodia albid* (Fr. : Fr.) Donk, fallen angiosperm branch, *Dai* 5549; stump of *Hippophaë*, *Yu* 163; stump of *Populus*, *Dai* 5517; fallen branch of *Quercus*, *Yu* 178.
- Antrodia albobrunnea* (Romell) Ryvarden, rotten wood of *Larix*, *Dai* 5717.
- Antrodia carbonica* (Overh.) Ryvarden & Gilb., fallen trunk of *Larix*, *Yu* 128, 141; *Li* 378 & 597 (HMAS); stump of *Larix*, *Dai* 5712, 5736, *Yu* 148.
- Antrodia crassa* (P. Karst.) Ryvarden, stump of *Larix*, *Dai* 5688, 5689, 5694 & 5709.
- Antrodia heteromorpha* (Fr. : Fr.) Donk, fallen trunk of *Abies*, *Dai* 5452, *Yu* 153; fallen trunk of *Cupressus*, *Dai* 5593; 5605 & 5609; fallen branch of *Pinus*, *Dai* 5631; *Li* 80 & 157 (HMAS).
- Antrodia hingganensis* Y.C. Dai & Penttilä, fallen trunk of *Abies*, *Yu* 142; dead branch of living gymnosperm tree, *Yu* 145; stump of *Larix*, *Dai* 5715; rotten stump of *Picea*, *Dai* 5661, rotten wood of *Pinus*, *Dai* 5535, 5542, 5570 & 5657a.
- Antrodia infirma* Renvall & Niemelä, fallen branch of *Abies*, *Dai* 5472.
- Antrodia macrospora* Bernic. & De Dom., fallen trunk of *Quercus*, *Dai* 5512.
- Antrodia malicola* (Berk. & M.A. Curtis) Donk, fallen trunk of *Quercus*, *Dai* 5491.
- Antrodia serialis* (Fr.) Donk, fallen trunk of *Larix*, *Dai* 5692 & 5731; rotten wood of *Larix*, *Dai* 5713; fallen trunk of *Picea*, *Yu* 222; fallen trunk of *Pinus*, *Dai* 5623.
- Antrodia vailantii* (DC. : Fr.) Ryvarden, fallen trunk of *Cupressus*, *Dai* 5606 & 5611; rotten stump of *Larix*, *Dai* 5690 & 5691; fallen trunk of *Picea*, *Yu* 19; stump of *Picea*, *Yu* 227.
- Bjerkandera adusta* (Willd. : Fr.) P. Karst., living tree of *Salix*, *Dai* 5585; HKAS 5822.
- Bjerkandera fumosa* (Pers. : Fr.) P. Karst., stump of *Betula*, *Yu* 273.
- Boletopsis grisea* (Peck) Bondartsev & Singer, ground in forest of *Quercus*, *Dai* 5627.
- Bondarzewia berkeleyi* (Fr.) Bondartsev & Singer, ground in forest of *Quercus*, *Dai* 5575.
- Bondarzewia montana* (Quél.) Singer, ground in forest of *Abies*, *Yu* 56 & 64; base of gymnosperm tree, *Yu* 318.
- Castanoporus castaneus* (Lloyd) Ryvarden, fallen branch of *Pinus*, *Dai* 5524, 5540, 5591, 5655, *Yu* 102; *Li* 467 (HMAS).
- Ceriporia purpurea* (Fr.) Donk, stump of *Populus*, *Yu* 257.
- Ceriporia viridans* (Berk. & Broome) Donk, fallen angiosperm branch, *Dai* 5547.
- Ceriporiopsis egula* C.J. Yu & Y.C. Dai, dead branch of *Sabina*, *Yu* 59; stump of *Sabina*, *Yu* 314.
- Ceriporiopsis gilvescens* (Bres.) Domański, fallen trunk of *Quercus*, *Yu* 282.
- Ceriporiopsis resinascens* (Romell) Domański, fallen angiosperm trunk, *Zhang* 4231.
- Cerrena unicolor* (Bull. : Fr.) Murrill, fallen branch of *Betula*, *Yu* 274; dead tree of *Hippophaë*, *Yu* 159; dead tree of *Quercus*, *Dai* 5502; living tree of *Salix*, *Dai* 5620; *Li* 140 (HMAS); HKAS 5242.
- Coltricia perennis* (L. : Fr.) Murrill, ground in forest of *Quercus* and *Pinus*, *Dai* 5490, 5582; *Li* 571 (HMAS); HKAS 5720.
- Cryptoporus volvatus* (Peck) Shear, living tree of *Pinus*, HKAS 5730.
- Cyclomyces xeranticus* (Berk.) Y.C. Dai & Niemelä, fallen trunk of *Quercus*, *Yu* 286; HKAS 5684.
- Daedaleopsis confragosa* (Bolton : Fr.) J. Schröt., living tree of *Salix*, *Yu* 13, 164, 190 & 192; fallen trunk of *Salix*, *Yu* 165; HKAS 5422 & 5470; stump of *Salix*, *Yu* 166.
- Datronia mollis* (Sommerf.) Donk, fallen angiosperm trunk, *Yu* 167.
- Datronia stereoides* (Fr.) Ryvarden, fallen angiosperm branch, *Dai* 5543.
- Dichomitus squalens* (P. Karst.) D.A. Reid, fallen trunk of *Pinus*, *Yu* 112; *Li* 280 & 449 (HMAS).
- Diplomitoporus flavescens* (Bres.) Domański, dead branch of living *Pinus*, *Dai* 5523 & 5658, *Yu* 101; *Li* 570 (HMAS); fallen branch of *Pinus*, *Dai* 5516 & 5526.
- Diplomitoporus lindbladii* (Berk.) Gilb. & Ryvarden, dead branch of living *Pinus*, *Yu* 99 & 106; rotten wood of *Pinus*, *Dai* 5556 & 5572; fallen decorticated trunk of *Salix*, *Yu* 162.
- Erastia salmonicolor* (Berk. & M.A. Curtis) Niemelä & Kinnunen, rotten wood of *Pinus*, *Dai* 5558.
- Fibroporia radiculosa* (Peck.) Parmasto, fallen branch of *Abies*, *Dai* 5460.
- Fomes fomentarius* (L. : Fr.) Fr., fallen trunk of *Quercus*, *Yu* 284.
- Fomitiporia hippophaeicola* (H. Jahn) Fiasson & Niemelä, living tree of *Hippophaë*, *Dai* 5550, *Yu* 169 & 255; dead tree of *Hippophaë*, *Yu* 160.
- Fomitiporia tibetica* Y.C. Dai & M. Zang, living tree of *Abies*, HKAS 5895.
- Fomitopsis pinicola* (Sw. : Fr.) P. Karst., fallen trunk of *Picea*, *Yu* 309; HMAS 37930, HKAS 5467 & 5688.
- Fomitopsis rosea* (Alb. & Schwein. : Fr.) P. Karst., fallen trunk of *Larix*, *Dai* 5698; fallen trunk of *Picea*, *Yu* 220; HMAS 39475.
- Fundalia cervina* (Schwein. : Fr.) Y.C. Dai, angiosperm stump, *Yu* 147; stump of *Quercus*, *Yu* 173; fallen trunk of *Rhododendron*, *Yu* 129.
- Fundalia gallica* (Fr.) Bondartsev & Singer, fallen angiosperm trunk, HKAS 5324, 5350 & 5353.
- Fundalia trogii* (Berk.) Bondartsev & Singer, angiosperm stump, *Yu* 110; fallen decorticated angiosperm trunk, *Yu* 113; fallen trunk of *Populus*, *Yu* 9; stump of *Populus*, *Dai* 5518; living tree of *Salix*, *Dai* 5358; fallen trunk of *Salix*, *Yu* 249.
- Ganoderma australe* (Fr.) Pat., stump of *Populus*, *Yu* 168; HKAS 5338 & 5394.
- Ganoderma lipsiense* (Batsch) G.F. Atk., living tree of *Betula*, *Dai* 5574; stump of *Quercus*, *Yu* 285; rotten wood, HMAS 37668.
- Ganoderma lucidum* (W. Curtis. : Fr.) P. Karst. *sensu lato*, living tree of *Quercus*, *Dai* 5629; stump of *Quercus*, *Yu* 171; HKAS 5265 & 5892.
- Gelatoporia subvermispota* (Pilát) Niemelä, rotten wood of *Abies*, *Dai* 5461; dead tree of *Rhododendron*, *Dai* 5729; fallen trunk of *Rhododendron*, *Yu* 155.
- Gloeophyllum abietinum* (Bull. : Fr.) P. Karst., fallen trunk of *Cupressus*, *Dai* 5602, 5608 & 5613; wood of *Pinus*, *Yu* 104.
- Gloeophyllum odoratum* (Wulfen) Imazeki, *Li* 436 (HMAS).
- Gloeophyllum protractum* (Fr.) Imazeki, charred gymnosperm wood, HMAS 39653; fallen trunk of *Picea*, *Dai* 5391;

HKAS 5341.

Gloeophyllum sepiarium (Wulfen : Fr.) P. Karst., dead branch of living *Abies*, *Dai* 5431 & 5434; fallen trunk of *Cupressus*, *Dai* 5614; fallen trunk of *Picea*, *Dai* 5364, HMAS 39652; stump of *Pinus*, *Dai* 5515; HKAS 5254; stump of *Quercus*, *Dai* 5511.

Gloeoporus dichrous (Fr. : Fr.) Bres., fallen angiosperm trunk, *Dai* 5617.

Gloeoporus taxicola (Pers. : Fr.) Gilb. & Ryvarden, fallen trunk of *Pinus*, *Dai* 5637; *Li* 553 (HMAS).

Hapalopilus rutilans (Pers. : Fr.) P. Karst., fallen branch of *Abies*, *Dai* 5467; fallen branch of *Picea*, *Dai* 5388 & 5389; fallen trunk of *Quercus*, *Dai* 5495.

Haploporus odorus (Sommerf.) Bondartsev & Singer, *Li* 322 & 541 (HMAS).

Haploporus thindii (Natarajan & Kolandavelu) Y.C. Dai, dead tree of *Acer*, *Dai* 5435, *Yu* 27; dead angiosperm branch, *Yu* 24 & 28; fallen trunk of *Lonicerna*, *Dai* 5597 & 5641; rotten wood of *Lonicerna*, *Dai* 5651.

Heterobasidium insulare (Murrill) Ryvarden *sensu lato.*, fallen trunk of *Pinus*, *Dai* 5468, 5534, 5537 & 5659; stump of *Pinus*, *Dai* 5581 & 5653.

Heterobasidium linzhiense Y.C. Dai & Korhonen, fallen trunk of *Abies*, *Dai* 5424, 5432, 5433, 5454, 5455, 5463, 5464, 5465, *Yu* 14, 15; stump of *Abies*, *Dai* 5429; fallen trunk of *Picea*, *Dai* 5372 & 5407; stump of *Picea*, *Dai* 5370 & 5401.

Heterobasidium parvorum Niemelä & Korhonen, fallen trunk of *Larix*, *Dai* 5725 & 5726.

Inocutis subdryophila Y.C. Dai & H.S. Yuan, *Li* 278, 283 & 460 (HMAS).

Inonotus compositus H.C. Wang, living tree of *Quercus*, *Dai* 5616 & 5567.

Inonotus sp. 1, dead tree of *Picea*, *Dai* 5392.

Irpex lacteus (Fr. : Fr.) Fr. *s. lato*, fallen branch of *Hippophaë*, *Dai* 5557.

Junghuhnia collabens (Fr.) Ryvarden, rotten wood of *Abies*, *Dai* 5442 & 5453; fallen trunk of *Larix*, *Yu* 140; rotten wood of *Picea*, *Dai* 5664.

Junghuhnia nitida (Pers. : Fr.) Ryvarden, rotten wood of *Quercus*, *Dai* 5677.

Junghuhnia semisupiniformis (Murrill) Ryvarden, fallen trunk of *Abies*, *Dai* 5475.

Laetiporus sulphureus (Bull. : Fr.) Murrill, fallen trunk of *Picea*, HKAS 5034.

Lenzites acuta Berk., living angiosperm tree, *Yu* 126.

Lenzites betulinus (L. : Fr.) Fr., fallen trunk of *Betula*, *Dai* 5530; rotten wood of *Betula*, *Dai* 5560 & 5678; stump of *Betula*, *Yu* 271; fallen trunk of *Quercus*, *Yu* 287; HKAS 9532; stump of *Quercus*, *Dai* 5498.

Leptoporus mollis (Pers. : Fr.) Quél., *Li* 480 (HMAS).

Megasporoporia quercina Y.C. Dai, *Quercus*, *Li* 231 (HMAS).

Megasporoporia rhododendri Y.C. Dai & Y.L. Wei, fallen trunk of *Rhododendron*, *Yu* 130.

Megasporoporia sp. 1, fallen branch of *Pinus*, *Dai* 5632.

Megasporoporia subcavernulosa Y.C. Dai & Sheng H. Wu, fallen branch of *Lonicera*, *Dai* 5638; fallen branch of *Quercus*, *Yu* 105 & 303.

Mensularia radiata (Sowerby : Fr.) Lázaro Ibiza, dead tree

of *Abies*? *Dai* 5722.

Oligoporus floriformis (Quél.) Gilb. & Ryvarden, rotten wood of *Picea*, *Dai* 5737; stump of *Picea*, *Yu* 327; *Li* 107 & 326 (HMAS).

Oligoporus lowei (Pilát) Gilb. & Ryvarden, rotten wood of *Abies*, *Dai* 5477; rotten wood of *Picea*, *Yu* 40 & 79.

Oligoporus sericeomollis (Romell) Bondartseva, fallen trunk of *Abies*, *Yu* 16 & 146; rotten wood of *Picea*, *Dai* 5662, *Yu* 34; rotten wood of *Pinus*, *Dai* 5536; fallen branch of *Sabina*, *Yu* 52.

Onnia leporina (Fr.) H. Jahn, *Li* 692 (HMAS).

Oxyporus corticola (Fr.) Ryvarden, stump of *Acer*, *Yu* 319.

Oxyporus populinus (Schumacher : Fr.) Donk, living tree of *Acer*, *Dai* 5596; living tree of *Populus*, *Dai* 5590; living tree of *Salix*, *Dai* 5622.

Oxyporus subulatus Ryvarden, fallen trunk of *Quercus*, *Yu* 280.

Phaeolus schweinitzii (Fr. : Fr.) Pat., base of living *Picea*, *Dai* 5405; *Li* 173 (HMAS).

Phellinidium sulphurascens (Pilát) Y.C. Dai, rotten wood of *Larix*, *Dai* 5708.

Phellinus baumii Pilát, living tree of *Lonicerna*, *Dai* 5630; dead tree of *Lonicerna*, *Dai* 5650; fallen trunk of *Lonicera*, *Yu* 231; *Li* 295 & 293 (HMAS).

Phellinus conchatus (Pers. : Fr.) Quél., living tree of *Lonicerna*, *Dai* 5711; stump of *Salix*, *Yu* 7 & 8.

Phellinus contiguus (Pers. : Fr.) Pat., fallen trunk of *Acer*, *Yu* 312; *Li* 563 (HMAS).

Phellinus ferreus (Pers.) Bourdot & Galzin, dead angiosperm tree, *Yu* 25; fallen branch of *Rhododendron*, *Yu* 289; fallen trunk of *Rhododendron*, *Yu* 144.

Phellinus himalayensis Y.C. Dai, living tree of *Abies*, *Dai* 5438; fallen trunk of *Abies*, *Dai* 5436, *Yu* 55; living tree of *Picea*, *Dai* 5363 & 5367; fallen trunk of *Picea*, *Dai* 5390 & 5411; HMAS 39451, 39452 & 39510.

Phellinus igniarius (L. : Fr.) Quél. *sensu lato*, living tree of *Juglans*, *Yu* 4; living tree of *Salix*, *Dai* 5723, *Yu* 343; *Li* 186 & 530 (HMAS).

Phellinus macgregorii (Bres.) Ryvarden, fallen trunk of *Rhododendron*, *Yu* 139 & 143.

Phellinus laricis (Jacq. ex Pilát) Pilát, fallen trunk of *Larix*, *Dai* 5714.

Phellinus cf. *pini* (Brot. : Fr.) A. Ames, living tree of *Pinus*, HKAS 9740.

Phellinus sp. 1, living angiosperm tree, *Yu* 187.

Phellinus tuberculatus (Baumg.) Niemelä, dead tree of *Cerasus*, *Yu* 239; living tree of *Prunus*, *Dai* 5413, 5415, 5586, 5588 & 5615, HMAS 39457.

Physisporinus sanguinolentus (Alb. & Schwein. : Fr.) Pilát, rotten wood of *Abies*, *Dai* 5481; stump of *Pinus*, *Yu* 296.

Piptoporus betulinus (Bull. : Fr.) P. Karst., *Betula*, *Li* 84 (HMAS); HKAS 5466.

Polyporus alveolaris (Bosc) Fr., fallen trunk of *Betula*, HMAS 39154; fallen branch of *Quercus*, *Yu* 176; fallen trunk of *Quercus*, *Dai* 5499.

Polyporus arcularius Batsch : Fr., dead branch of *Cerasus*, *Yu* 238; stump of *Hippophaë*, *Yu* 243; branch of *Sabina*, *Yu* 53; HKAS 5342, 5443, 5991 & 5997.

Polyporus badius (Pers. : Gray) Schwein., fallen angiosperm branch, *Yu* 97; HKAS 5880.

- Polyporus brumalis* Pers. : Fr., fallen angiosperm branch, *Dai* 5528.
- Polyporus ciliatus* Fr. : Fr., fallen branch of *Betula*, *Yu* 268.
- Polyporus mongolicus* (Pilát) Y.C. Dai, *Li* 198 (HMAS).
- Polyporus squamosus* (Huds. : Fr.) Fr., rotten angiosperm wood, HMAS 39485.
- Polyporus subvarius* C.J. Yu & Y.C. Dai, living tree of *Salix*, *Yu* 2 & 743.
- Polyporus tubaeformis* (P. Karst.) Ryvarden & Gilb., rotten wood of *Abies*, *Dai* 5439; fallen trunk of *Picea*, *Dai* 5384 & 5412.
- Polyporus umbellatus* (Pers.) Fr., *Yu* 57; *Li* 660 (HMAS).
- Polyporus varius* Pers. : Fr., fallen trunk of *Rhododendron*, *Yu* 84; *Li* 265 (HMAS), HMAS 39658, HKAS 5626.
- Postia alni* Niemelä & Vampola, fallen branch of *Betula*, *Yu* 39; fallen branch of *Rhododendron*, *Yu* 76.
- Postia balsamea* (Peck) Jülich, rotten stump of *Larix*, *Dai* 5701, *Yu* 152; fallen trunk of *Larix*, *Dai* 5733, *Yu* 154.
- Postia caesia* (Schrad. : Fr.) P. Karst., rotten wood of *Abies*, *Dai* 5466, *Yu* 95; fallen trunk of *Cupressus*, *Dai* 5603; stump of *Picea*, *Dai* 5406; rotten wood of *Pinus*, *Dai* 5587, 5618, 5619 & 5634, *Yu* 119.
- Postia ceriflua* (Berk. & M.A. Curtis) Jülich, rotten wood of *Picea*, *Dai* 5387; wood of *Pinus*, *Dai* 5584.
- Postia fragilis* (Fr. : Fr.) Jülich, stump of *Abies*, *Yu* 48 & 75; fallen trunk of *Cupressus*, *Dai* 5603; rotten wood of *Picea*, *Dai* 5680, *Yu* 207.
- Postia guttulata* (Peck) Jülich, *Li* 487 (HMAS).
- Postia lactea* (Fr. : Fr.) P. Karst., fallen decorticated angiosperm trunk, HKAS 5210.
- Postia leucomallella* (Murrill) Jülich, stump of *Pinus*, *Dai* 5553 & 5554.
- Postia stiptica* (Pers. : Fr.) Jülich, fallen gymnosperm trunk, *Yu* 149; *Li* 521 (HMAS).
- Postia tephroleuca* (Fr.) Jülich, fallen trunk of *Cupressus*, *Dai* 5603a; fallen trunk of gymnosperm, *Yu* 290; fallen trunk of *Larix*, *Yu* 133; rotten wood of *Picea*, *Dai* 5681, *Yu* 333; stump of *Pinus*, *Dai* 5579, 5581b; *Li* 356 (HMAS).
- Pycnoporus cinnabarius* (Jacq. : Fr.) P. Karst., fallen branch of *Betula*, *Dai* 5665.
- Rhodonia placenta* (Fr.) Niemelä, K.H. Larsson & Schigel, fallen decorticated trunk of *Pinus*, *Dai* 5583.
- Rigidoporus crocatus* (Pat.) Ryvarden, rotten wood of *Abies*, *Dai* 5443; stump of *Abies*, *Dai* 5480; fallen trunk of *Quercus*, *Yu* 297; stump of *Quercus*, *Yu* 288.
- Rigidoporus ulmarius* (Sowerby) Imazeki, *Li* 304 (HMAS).
- Sarcoporia polyspora* P. Karst., rotten wood of *Picea*, *Dai* 5675, 5676, *Yu* 20; rotten wood of *Pinus*, *Dai* 5583, *Yu* 626; stump of *Pinus*, *Yu* 308.
- Schizopora flavipora* (Cooke) Ryvarden, rotten angiosperm wood, *Dai* 5508; fallen trunk of *Quercus*, *Yu* 170 & 172.
- Schizopora paradoxa* (Schrad. : Fr.) Donk, fallen branch of *Quercus*, *Yu* 180, 185 & 193; fallen trunk of *Rhododendron*, *Yu* 85.
- Schizopora radula* (Pers. : Fr.) Hallenb., fallen branch of *Acer*, *Yu* 60; dead tree of *Quercus*, *Dai* 5501.
- Skeletocutis alutacea* (J. Lowe) Jean Keller, fallen branch of *Pinus*, *Dai* 5577 & 5592.
- Skeletocutis amorphia* (Fr. : Fr.) Kotl. & Pouzar, fallen branch of *Pinus*, *Dai* 5639.
- Skeletocutis biguttulata* (Romell) Niemelä, fallen trunk of *Pinus*, *Dai* 5555; dead branch of *Sabina*, *Dai* 5416.
- Skeletocutis carneogrisea* A. David, fallen trunk of *Abies*, *Dai* 5710.
- Skeletocutis krawtzevii* (Pilát) Kotl. & Pouzar, dead angiosperm branch, *Yu* 29.
- Skeletocutis lenis* (P. Karst.) Niemelä, fallen trunk of *Picea*, *Yu* 313.
- Skeletocutis nivea* (Jungh.) Jean Keller, fallen branch of *Acer*, *Dai* 5668; fallen angiosperm branch, *Dai* 5504 & 5545; dead branch of *Betula*, *Yu* 26; fallen trunk of *Hippophaë*, *Dai* 5595; fallen trunk of *Lonicerna*, *Dai* 5685; fallen branch of *Quercus*, *Yu* 177; *Li* 444–2 (HMAS); fallen trunk of *Rhododendron*, *Dai* 5393.
- Skeletocutis* sp. 1, dead branch of *Picea*, *Yu* 219.
- Skeletocutis stellae* (Pilát) Jean Keller, fallen trunk of *Abies*, *Yu* 50 & 51.
- Skeletocutis vulgaris* (Fr.) Niemelä & Y.C. Dai, fallen trunk of *Abies*, *Yu* 17; rotten wood of *Abies*, *Dai* 5450, 5471, 5679a & 5687; rotten wood of *Larix*, *Dai* 5699, 5718 & 5720; fallen trunk of *Sabina*, *Yu* 218.
- Stromatoscypha fimbriata* (Pers. : Fr.) Donk, rotten wood of *Pinus*, *Dai* 5538.
- Trametes gibbosa* (Pers.) Fr., *Li* 439 (HMAS).
- Trametes hirsuta* (Wulfen : Fr.) Pilát, fallen angiosperm branch, *Dai* 5514; fallen branch of *Cupressus*, *Dai* 5610; *Pinus*, HMAS 39643; fallen trunk of *Quercus*, *Dai* 5504, *Yu* 175; *Li* 444, 481 & 539 (HMAS); HKAS 5335.
- Trametes ochracea* (Pers.) Gilb. & Ryvarden, fallen trunk of *Betula*, *Yu* 270.
- Trametes orientalis* (Yasuda) Imazeki, stump of *Betula*, *Dai* 5734.
- Trametes pubescens* (Schumach. : Fr.) Pilát, fallen angiosperm trunk, *Dai* 5624; fallen trunk of *Quercus*, *Dai* 5489 & 5506; stump of *Ulmus*, *Yu* 6; *Li* 131 (HMAS).
- Trametes suaveolens* (Fr. : Fr.) Fr., fallen trunk of *Salix*, *Yu* 304; HKAS 5846.
- Trametes thujae* J.D. Zhao, fallen trunk of *Thuja*, HMAS 58278.
- Trametes versicolor* (L. : Fr.) Pilát, *Betula*, HMAS 39486; fallen trunk of *Picea*, *Dai* 5409; dead tree of *Quercus*, *Dai* 5502; living tree of *Salix*, *Dai* 5362; HKAS 5720 & 5725.
- Trechispora hymenocystis* (Berk. & Broome) K-H. Larsson, rotten wood of *Abies*, *Yu* 62.
- Trechispora mollusca* (Pers. : Fr.) Liberta, fallen branch of *Betula*, *Yu* 342.
- Trichaptum abietinum* (Pers. : Fr.) Ryvarden, fallen trunk of *Abies*, *Dai* 5426 & 5485; rotten wood of *Abies*, *Dai* 5425, *Yu* 103; dead branch of living *Picea*, *Dai* 5365; HMAS 39458.
- Trichaptum fuscoviolaceum* (Ehrenb. : Fr.) Ryvarden, fallen trunk of *Picea*, *Dai* 5396; stump of *Picea*, *Dai* 5371.
- Trichaptum montanum* T. Hatt., fallen trunk of *Picea*, *Dai* 5383; stump of *Picea*, *Dai* 5369, 5374, 5375, 5394 & 5397.
- Trichaptum pargamenum* (Fr.) G. Cunn., fallen trunk of *Quercus*, *Dai* 5496; stump of *Quercus*, *Dai* 5493; *Li* 343 (HMAS).
- Tyromyces chioneus* (Fr.) P. Karst., fallen branch of *Quercus*, *Yu* 194.
- Tyromyces kmetii* (Bres.) Bondartsev & Singer, stump of *Quercus*, *Dai* 5492.

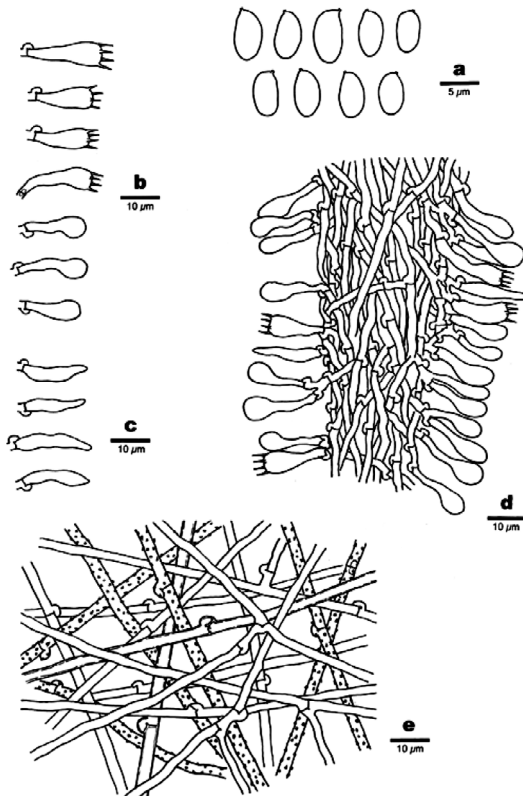


Fig. 2. *Ceriporiopsis egula* (drawn from holotype). — **a**: Basidiospores. — **b**: Basidia and basidioles. — **c**: Cystidioles. — **d**: Section through trama. — **e**: Hyphae from subiculum.

New taxa

Ceriporiopsis egula C.J. Yu & Y.C. Dai, *sp. nova* (Fig. 2)

Carpophorum annuum, *resupinatum*; *facies pororum sulphurea*, *pori rotundi vel angulati*, 3–4 per mm. *Systema hypharum monomiticum*, *hyphae generatoriae fibulatae*, *hyphae subiculi* 2–3.1 μm in diam. *Sporae ellipsoideae*, *hyalinae*, 4.9–6.8 \times 2.4–3.3 μm .

TYPE: China. Xizang Autonomous Region (Tibet), Cuona County, Mama, alt. 3000 m, on stump of *Sabina*, 21.VIII.2004 Yu 314 (holotype in IFP; isotype in H).

ETYMOLOGY. *Egulus*: a kind of sulphur, referring to the colour of basidiocarps.

Fruitbody. Basidiocarps annual, resupinate, sulphur-yellow, ca. 15 cm or more in the long-

est dimension, up to 2 mm thick at the centre, soft when fresh, without odour or taste; sterile margin, cottony upon drying, up to 1 mm. Pore surface sulphur-yellow when fresh and dry; pores round to angular, 3–4 per mm; dissepiments thin, slightly lacerate. Subiculum sulphur-yellow, soft corky, very thin, about 0.5 mm thick. Tubes yellowish to sulphur-yellow, soft corky, up to 2 mm long.

Hyphal structure. Hyphal system monomitic; generative hyphae heavily encrusted by crystals, all septa with clamp connections; hyphae unchanged in KOH.

Subiculum. Generative hyphae hyaline, thin-walled, occasionally branched, loosely interwoven, IKI–, CB–, 2–3.1 μm in diam ($n = 21/1$). Most hyphae covered by numerous sandy crystals.

Tubes. Tramal hyphae hyaline, thin-walled, interwoven, IKI–, CB–, 1.7–3 μm in diam ($n = 40/2$). Cystidia absent; cystidioles present, clavate to cylindrical, thin-walled, smooth, 16–22 \times 3–5.2 μm ($n = 8/2$); some hyphae covered by numerous sandy crystals. Basidia capitate or clavate, capitate basidia dominant, thin-walled with a basal clamp and four sterigmata, 12–27 \times 4.1–6.8 μm ($n = 20/2$). Basidioles mostly capitate, but slightly shorter than basidia.

Spores. Basidiospores ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–, (4.6–)4.9–6.8(–6.9) \times (2.3–)2.4–3(–4) μm , $L = 5.66 \mu\text{m}$, $W = 2.92 \mu\text{m}$, $Q = 1.84–2.1$ ($n = 86/2$).

ADDITIONAL SPECIMEN EXAMINED (paratype): **China.** Xizang Autonomous Region (Tibet), Linzhi County, Lulang, alt. 3700 m, on dead branch of *Sabina*, 9.VIII.2004 Yu 59 (IFP, H).

Ceriporiopsis egula is characterized by its sulphur-yellow pore surface, capitate basidia and basidioles, large and ellipsoid basidiospores, and by growth on wood of *Sabina*. Its capitate basidia and basidioles are especially common at the hymenium close to dissepimental edge.

Ceriporiopsis pseudogilvescens was originally described from Siberia, and has wide distribution in northern hemisphere; its basidiospores are broadly ellipsoid, 4–6 \times 2.6–3.3 μm , $L = 4.64 \mu\text{m}$, $W = 2.89 \mu\text{m}$, $Q = 1.5–1.8$ (Kinnunen & Niemelä 2005). Hence it has rather similar spores as in *C. egula*. However, *C. pseudogil-*

vescens has white pore surface when fresh, and pores become resin brown when dry. Besides, it has thick-walled and cyanophilous hyphae and its spores are broadly ellipsoid. In addition, it grows on angiosperm trees, especially on *Populus* and *Salix* (Kinnunen & Niemelä 2005).

Ceriporiopsis cystidiata was recently described from Brazil, tropical America, and it has a yellow pore surface (Loguercio-Leite *et al.* 2001), but it is different from *C. egula* by its oblong-ellipsoid basidiospores and encrusted cystidia.

Heterobasidion linzhiense Y.C. Dai & Korhonen, *sp. nova* (Fig. 3)

Carpophorum annuum, pileatum; facies pororum cremea, pori angulati, 2–4 per mm. Systema hypharum dimiticum, hyphae generatoriae septatae sine fibulis, hyphae skeletales contexti 3.6–6 µm in diam. Sporae perlate ellipsoideae vel subgloboseae, hyalinae, asperae, 5.7–7.8 × 4.1–6.1 µm.

TYPE: China, Xizang Autonomous Region (Tibet), Linzhi County, Bayi, Cuomujiri, on stump of *Picea*, 30.VII.2004 Dai 5408 (holotype in IFP, isotype in H).

ETYMOLOGY. Linzhi: a county in eastern Xizang.

Basidiocarps. Basidiocarps annual, pileate, sessile or with a lateral stipe, solitary or imbricate, leathery when fresh, corky when dry, without odour or taste. Pileus semicircular to fan-shaped, projecting up to 3 cm, 5 cm wide, and 8 mm thick at base. Pileal surface cream buff to reddish brown, azonate; margin sharp, undulating when dry. Pore surface cream to buff-yellow when dry; pores angular, 2–4 per mm; dissepiments thin, entire to lacerate. Context cream, corky, azonate, up to 3 mm thick. Tubes cream buff to buff-yellow, corky, up to 5 mm long.

Hyphal structure. Hyphal system dimitic; generative hyphae without clamp connections; skeletal hyphae IKI–, CB+, hyphae unchanged in KOH.

Context. Generative hyphae hyaline, thin-walled, sometimes slightly thick-walled, frequently simple septate, occasionally branched, 2.4–5 µm in diam; skeletal hyphae dominant, hyaline, thick-walled with a lumen, rarely branched, interwoven, 3.6–6 µm in diam.

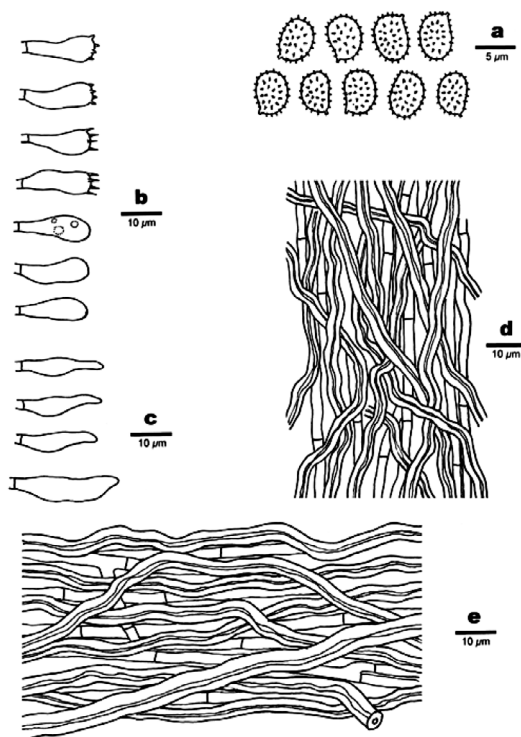


Fig. 3. *Heterobasidion linzhiense* (drawn from holotype). — a: Basidiospores. — b: Basidia and basidioles. — c: Cystidioles. — d: Hyphae from trama. — e: Hyphae from context.

Tubes. Generative hyphae hyaline, thin-walled, frequently simple septate, rarely branched, parallel along the tubes, 2–4.3 µm in diam; skeletal hyphae dominant, hyaline, thick-walled with a lumen, occasionally branched, interwoven, 3–5.2 µm in diam. Cystidia absent; cystidioles present, subulate, hyaline, thin-walled, 15.2–26 × 3.6–6 µm; basidia clavate, with a simple basal septum and four sterigmata, 13.8–19.4 × 4.5–6.8 µm; basidioles in shape similar to basidia, but smaller.

Spores. Basidiospores broadly ellipsoid to subglobose, hyaline, fairly thick-walled, asperulate, usually guttulate, IKI–, CB+, (5–)5.7–7.8(–10) × (4–)4.1–6.1(–10) µm, $L = 6.47$ µm, $W = 4.98$ µm, $Q = 1.22–1.43$ ($n = 330/11$).

Heterobasidion linzhiense belongs to the *H. insulare* complex. Three intersterility groups were found in the complex: ‘T group’ occurs in southern China, ‘N group’ mostly in northern China and Japan, ‘Y group’ in Yunnan and

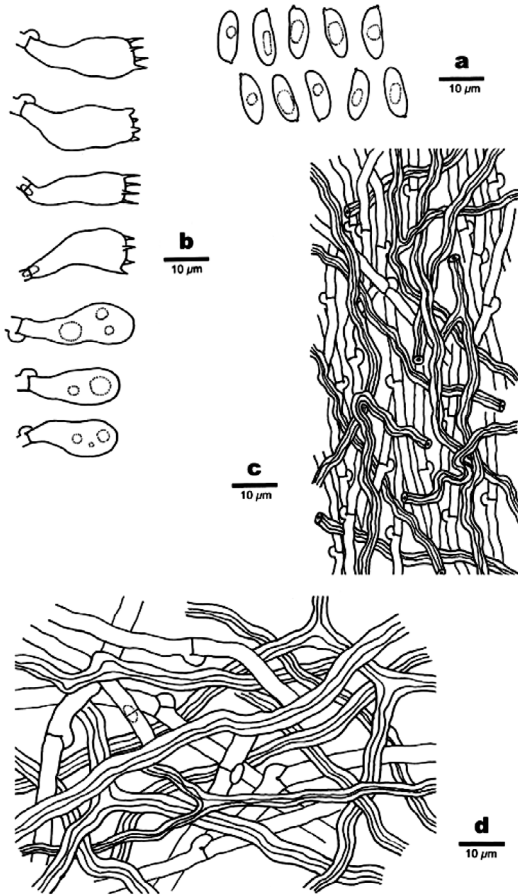


Fig. 4. *Polyporus subvarius* (drawn from holotype). — **a:** Basidiospores. — **b:** Basidia and basidioles. — **c:** Hyphae from trama. — **d:** Hyphae from context.

eastern China (Dai *et al.* 2002). Recent studies (unpublished) showed another two intersterility groups in the complex were found in Tibet. *Heterobasidion linzhiense* is one of the intersterility groups in the *H. insulare* complex, and it is intersterile with other four groups. This group differs from other groups in the complex by its smaller pores and bigger basidiospores, and especially it has subulate cystidioles.

The type of *H. insulare* was collected on *Pinus* from Philippines, and it has smaller basidiospores, $(4.8-4.9-6.5(-8.1) \times (3.7-3.9-5.2(-5.9) \mu\text{m}$, $L = 5.63 \mu\text{m}$, $W = 4.47 \mu\text{m}$, $Q = 1.24-1.26$. In addition, some conductive hyphae are present in its trama, and these hyphae are 4–8 μm in diam.

We do not have living stocks of *H. insulare*

s. typi, and the compatible matings between *H. linzhiense* and *H. insulare s. typi* are unknown. However, *H. linzhiense* has bigger basidiospores and cystidioles, and no conductive hyphae are present in its trama, so *H. linzhiense* is different from *H. insulare s. typi*.

ADDITIONAL SPECIMENS EXAMINED (paratypes): **China.** Xizang Autonomous Region (Tibet), Linzhi County, Ecological Station, fallen trunk of *Abies*, 31.VII.2004 Dai 5424, 5432, 5433, 5455, 5463, 5464, 5465 (IFP, H), 5454 (IFP); stump of *Abies*, 31.VII.2004 Dai 5429 (IFP); Bayi, Cuomu-jiri, stump of *Picea*, 30.VII.2004 Dai 5370 (IFP, H) & 5401 (IFP); fallen trunk of *Picea*, 30.VII.2004 Dai 5372 (IFP, H) & 5407 (IFP).

Polyporus subvarius C.J. Yu & Y.C. Dai, *sp. nova* (Fig. 4)

Carpophorum annuum, *substipitatum*; *facies pororum cremea vel brunneola*; *pori rotundi*, 1–2 per mm. *Systema hypharum dimiticum*, *hyphae generatoriae fibulatae*, *hyphae skeletales contexti* 3–6.4 μm in diam. *Sporae cylindricae*, *hyalinae*, IKI–, CB–, 9.2–12.6 \times 3.9–4.9 μm .

TYPE: China. Xizang Autonomous Region (Tibet), Lasha, Luobulinka Park, on living tree of *Salix*, 2.VIII.2004 Yu 2 (holotype in IFP, isotype in H).

ETYMOLOGY. *Subvarius*: somewhat resembling *Polyporus varius*.

Fruitbody. Basidiocarps annual, laterally stipitate, imbricate, soft leathery and watery when fresh, without odour or taste, becoming corky upon drying. Pilei circular, up to 15 cm in diam, 2 cm thick at centre; margin undulating, acute. Pileal surface glabrous, clay-buff, darker with age, colour unchanged when bruised or drying, with radial stripes. Pore surface clay-buff; pores angular, radially arranged, 1–2 per mm; dissepiments thin, entire. Context cream and soft when fresh, pinkish buff and hard corky when dry, up to 16 mm thick; tube layer cream, brittle when dry, up to 5 mm long. Stipe short and thick, bearing a black cuticle at the lower part, velutinous to glabrous, corky, up to 2.5 cm long and 1.5 cm in diam.

Hyphal structure. Hyphal system dimitic; generative hyphae with clamp connections; skeletal-binding hyphae thick-walled with a narrow

lumen or subsolid, dendritically branched and tapering in the end; all hyphae unchanged in KOH.

Context. Generative hyphae common, hyaline, thin-walled, occasionally branched, 2.3–3.2 μm in diam; skeleto-binding hyphae dominant, flexuous, strongly interwoven, IKI–, CB+, skeletal part with a lumen, 3–6.4 μm in diam ($n = 25/2$). Hyphae in stipe are similar to those in context.

Tubes. Generative hyphae infrequent, hyaline, thin-walled, frequently branched, 1.8–3(–3.4) μm in diam ($n = 23/2$); skeleto-binding hyphae dominant, tightly interwoven, strongly agglutinated, IKI–, CB+, skeletal part with a distinct lumen, 3–3.9 μm in diam, binding part mostly subsolid. Cystidia and cystidioles absent. Basidia clavate, with a basal clamp and four sterigmata, 22–26 \times 7.3–10.9 μm ; basidioles in shape similar to basidia, but slightly smaller.

Spores. Basidiospores cylindrical, slightly tapering at apex, hyaline, thin-walled, smooth, usually bearing one guttule, CB–, IKI–, (8.7–)9.2–12.6(–12.7) \times (3.7–)3.9–4.9(–5.1) μm , $L = 10.7 \mu\text{m}$, $W = 4.48 \mu\text{m}$, $Q = 2.32$ –2.47 ($n = 104/2$).

Polyporus subvarius is closely related to *P. varius*, but the latter species has small pores and basidiospores (5–9 per mm, (7–)7.3–9(–9.5) \times (2.3–)2.4–3(–3.2) μm , $L = 8.03 \mu\text{m}$, $W = 2.65 \mu\text{m}$, $Q = 3.03$ (Dai 1999a); 4–5 per mm, (6.2–)6.7–9.2(–11) \times (3–)3.1–3.8(–4) μm , $L = 8.1 \mu\text{m}$, $W = 3.5 \mu\text{m}$, $Q = 2.2$ –2.4 (Niemelä 2005).

Macroscopically *P. subvarius* resembles *P. squamosus* by sharing lateral stipitate basidiocarps with large pores, but the latter has dark brown flecks at its pileal surface, and especially it has larger basidiospores, 13–16(–18) \times (4–)4.5–5.6(–6) μm , $L = 14.71 \mu\text{m}$, $W = 4.96 \mu\text{m}$, $Q = 2.96$ (Dai 1999a); (11.2–)12.3–15.3(–16) \times (4–)4.3–5.3(–5.8) μm , $L = 13.8 \mu\text{m}$, $W = 4.7 \mu\text{m}$, $Q = 3$ (Niemelä 2005).

Polyporus admirabilis is a laterally stipitate species with large basidiocarps (up to 18 cm wide and 1 cm thick at centre; Dai 1999a), but it differs from *P. subvarius* by having both smaller pores (3–4 per mm) and spores, (7.5–)7.8–9(–9.1) \times (2.9–)3–3.5 μm , $L = 8.29 \mu\text{m}$, $W = 3.12 \mu\text{m}$, $Q = 2.66$ (Dai 1999a). Furthermore,

it lacks radial stripes at pileal surface, and has subulate cystidioles.

Polyporus alveolaris is another laterally stipitate species, and its pileal surface sometimes bears radial stripes, it is therefore somewhat similar to *P. subvarius*. However, the stipe is cream-coloured, without black cuticle, and the pores are hexagonal in *P. alveolaris*, and its basidiospores are thinner (9–10.5 \times 3.2–4 μm , $L = 9.81 \mu\text{m}$, $W = 3.55 \mu\text{m}$, $Q = 2.76$ –2.77 (Dai 1999a).

Polyporus ulmi (= *P. choseniae*) was described from the Russian Far East (Bondartsev & Lyubarsky 1961), and it grows on the Salicaceae (*Chosenia*), too. That species has rather similar basidiospores (11–12.8 \times 4.2–5 μm , $L = 11.67 \mu\text{m}$, $W = 4.62 \mu\text{m}$, $Q = 2.53$; Dai 1999a) as in *P. subvarius*. *Polyporus ulmi* is distinguished from *P. subvarius* by having a light-coloured stipe, smaller pores (2–3 per mm), and especially the basidiospores of the former are oblong ellipsoid or cylindrical, not tapering at apex.

ADDITIONAL SPECIMEN EXAMINED (paratype): **China**. Xizang Autonomous Region (Tibet), Lasha, Luobulinka Park, on living tree of *Salix*, 28.VIII.2005 Yu 743 (IFP).

Notes on selected species

Inonotus sp. 1

Basidiocarps annual, pileate, sessile; pileal surface rough, azonate, margin obtuse; pore surface grayish brown, pores angular, 2–3 per mm; context thick, corky when dry, distinctly zoned. Hyphal system monomitic, generative hyphae without clamp connections, gloeoplerous hyphae present in trama and context; both setal hyphae and setae absent; basidiospores ellipsoid, hyaline, thin- to thick-walled, smooth, IKI–, CB–, 8–10 \times 5.5–7 μm .

The hyphal structure of this taxon is similar to that of *I. hispidus*, but the basidiospores in the latter are subglobose and distinctly coloured (8.5–10 \times 7.5–8.8 μm), and its pileal surface is hispid. Furthermore, it mostly grows on angiosperms.

SPECIMEN EXAMINED: **China**. Xizang Autonomous Region (Tibet), Linzhi County, Bayi, dead tree of *Picea*, 30.VIII.2004 Dai 5392 (IFP).

Megasporoporia sp. 1

Basidiocarps annual, pileate or effused-reflexed; pileal surface cream coloured, azonate, acute; pore surface cream to buff-yellow, pores irregular, 2–4 per mm, dissepiments thin, entire to lacerate. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae dominant, dextrinoid, CB+, unchanged in KOH; cystidia and cystidioles absent; basidiospores cylindrical, hyaline, thin-walled, smooth, IKI–, CB–, (9–)9.8–13(–13.6) × (4.5–)4.9–6(–6.1) μm , $L = 11.3 \mu\text{m}$, $W = 5.28 \mu\text{m}$, $Q = 2.14$ ($n = 36/1$).

Megasporoporia sp. 1 resembles *M. subcavernulosa* by having similar basidiospores. However, the latter has resupinate basidiocarps and entire tube mouths; in particular it has dendrohyphidia (Dai & Wu 2004).

SPECIMEN EXAMINED: **China**. Xizang Autonomous Region (Tibet), Linzhi County, Bayi, fallen branch of *Pinus*, 3.VIII.2004 Dai 5632 (IFP).

Phellinus sp. 1

Basidiocarps perennial, pileate, sessile, pendant with a rudimentary stipe; pileal surface grayish black, concentrically sulcate, margin acute; pore surface yellowish brown, pores angular, 5–6 per mm; context fawn, woody hard, thin. Hyphal system dimitic, generative hyphae without clamp connections, skeletal hyphae dominant, tramal hyphae subparallel along the tubes, contextual skeletal hyphae 2.1–3.1 μm in diam; hymenial setae subulate, thick-walled, 15–22 × 5–8.5 μm ; basidiospores broadly ellipsoid to subglobose, yellowish, thick-walled, smooth, IKI–, CB–, 3.7–4.1(–4.6) × (2.9–)3–3.4(–3.8) μm ($n = 30/1$).

Macroscopically *Phellinus* sp. 1 is similar to *P. acontextus*, which was described from Nepal (Hjortstam & Ryvar den 1984), and both species have pendant basidiocarps. However, *P. acontextus* lacks setae, and its basidiospores are bigger, 5.5–6.5 × 3.5–4 μm (Hjortstam & Ryvar den 1984).

SPECIMEN EXAMINED: **China**. Xizang Autonomous Region (Tibet), Linzhi County, Baiba Forest Farm, living angiosperm tree, 13.VIII.2004 Yu 187 (IFP).

Skeletocutis sp. 1

Basidiocarps annual, resupinate, hard corky; pore surface pale grey to greyish-brown, margin white, pores round to angular, 4–5 per mm, dissepiments thin, entire. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae dominant, IKI–, CB–, unchanged in KOH, hyphae at dissepimental edges covered with fine, sharp-pointed encrustations; cystidioles fusoid, abundant, clavate, with a narrow apical tip, 9.2–13.7 × 3.1–4.6 μm ; basidiospores allantoid, usually guttulate, hyaline, thin-walled, smooth, IKI–, CB–, (3.5–)3.7–4.8(–5) × (1.6–)1.8–2.1(–2.2) μm , $L = 4.1 \mu\text{m}$, $W = 1.93 \mu\text{m}$, $Q = 2.12$ ($n = 30/1$).

Skeletocutis sp.1 resembles *S. krawtzevii* by having greyish pore surface and similar basidiospores. However, *S. krawtzevii* has smaller pores (5–6 per mm), slightly smaller basidiospores (3.4–4.1 × 1.7–2 μm), in particular it has monomitic dissepimental edges (Niemelä 1998).

SPECIMEN EXAMINED. **China**. Xizang Autonomous Region (Tibet), Gongbujiangda County, Cuogao, Dead branch of living *Picea*, 16.VIII.2004 Yu 219 (IFP).

Acknowledgements

We thank Prof. Teuvo Ahti (H, Finland) for revising the Latin descriptions and improving the manuscript. YCD thanks Dr. Tuomo Niemelä (University of Helsinki, Finland) for his friendly support of his studies in various ways at Botanical Museum of University of Helsinki. The study was supported by the Ministry of Science and Technology of China (Project no. 2005DFA30280).

References

- Adhikari, M. K. 2000: *Mushrooms of Nepal*. — P.U. Printers, Kathmandu.
- Anonymous 1983: [*Fungi of Xizang*]. — Sci. Press, Beijing. [In Chinese].
- Anonymous 1986: [*Fungi of the Hengduan Mountains*]. — Sci. Press, Beijing. [In Chinese].
- Anonymous 1995: [*Flora and fauna of the Mt. Namjagbarwa Region*]. — Sci. Press, Beijing. [In Chinese].
- Berkeley, M. J. 1851: Decades of fungi. Sikkim-Himalayan fungi collected by Dr. Hooker. — *Hook. J. Bot.* 3: 77–84.

- Bondartsev, A. 1961: Species nonnullae Polyporaceae curiosae orientis extremi. — *Bot. Mater. Otd. Sporov. Rast. Bot. Inst. Komarova Akad. Nauk S.S.S.R.* 14: 198–206.
- Dai, Y. C. 1999a: Changbai wood-rotting fungi 11. Species of *Polyporus sensu stricto*. — *Fung. Sci.* 14: 67–77.
- Dai, Y. C. 1999b: *Phellinus sensu lato* (Aphyllphorales, Hymenochaetaceae) in East Asia. — *Acta Bot. Fennica* 166: 1–115.
- Dai, Y. C., Vainio, E., Hantula, J., Niemelä, T. & Korhonen, K. 2002: Sexuality and intersterility within *Heterobasidion insulare* complex. — *Mycol. Res.* 106: 1435–1448.
- Dai, Y. C. & Wu, S. H. 2004: *Megasporoporia* (Aphyllphorales, Basidiomycota) in China. — *Mycotaxon* 89: 379–388.
- Hattori, T., Adhikari, M. K., Suda, T. & Doi, Y. 2002: A list of polypores (Basidiomycotina, Aphyllphorales) collected in Jumla, Nepal. — *Bull. Natn. Sci. Mus., Tokyo*, Ser. B 28: 27–38.
- Hjortstam, K. & Ryvarden, L. 1984: Some new and noteworthy Basidiomycetes (Aphyllphorales) from Nepal. — *Mycotaxon* 20: 133–151.
- Imazeki, R., Kobayasi, Y. & Aoshima, K. 1966: Fungi. — In: *The flora of eastern Himalaya*: 611–626. Univ. Tokyo, Tokyo.
- Kinnunen, J. & Niemelä, T. 2005: North European species of *Ceriporiopsis* (Basidiomycota) and their Asian relatives. — *Karstenia* 45: 81–90.
- Loguercio-Leite, C., Gonçalves, G. V. de C. & Ryvarden, L. 2001: Studies in neotropical polypores 13. *Ceriporiopsis cystidiata* sp. nov. — *Mycotaxon* 79: 285–288.
- Mao, X. L., Jiang, C. P. & Ouyang, C. Z. 1993: [*Economic macrofungi of Tibet*]. — Beijing Sci. Techn. Press, Beijing. [In Chinese].
- Niemelä, T. 1998: The *Skeletocutis subincarnata* complex (Basidiomycetes), a revision. — *Acta Bot. Fennica* 161: 1–35.
- Niemelä, T. 2005: Polypores, lignicolous fungi. — *Norrinia* 13: 1–320. [In Finnish, with English summary].
- Núñez, M. & Ryvarden, L. 2001: East Asian polypores 2. Polyporaceae *s. lato*. — *Syn. Fungorum* 14: 170–522.
- Petersen, J. H. 1996: *Farvekort*. — Danish Mycological Society's colour-chart. Foreningen til Svampekundskabens Fremme, Greve.
- Rattan, S. S. 1977: The resupinate Aphyllphorales of the north western Himalayas. — *Biblioth. Mycol.* 60: 14–27.
- Rayner, R. W. 1970: *A mycological colour chart*. — Commonwealth Mycol. Inst., Kew.
- Ryvarden, L. 1977: Some wood inhabiting Aphyllphoraceous fungi from Nepal. — *Khumbu Himal.* 6: 379–386.