

Wood-inhabiting fungi in southern China. 6. Polypores from Guangxi Autonomous Region

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Altogether 137 species of polypores were identified, based on specimens collected from the Guangxi Autonomous Region, southern China. A checklist of the polypores with collection data is supplied. Three new species, *Junghuhnia flabellata* H.S. Yuan & Y.C. Dai, *Rigidoporus fibulatus* H.S. Yuan & Y.C. Dai and *Trechispora suberosa* H.S. Yuan & Y.C. Dai, are described and illustrated. *Junghuhnia flabellata* is characterized by its flabelliform basidiocarps, small pores and small basidiospores, and skeletostidia mostly present in dissepiments. *Rigidoporus fibulatus* is characterized by ceraceous to cartilaginous basidiocarps, clamp connections on generative hyphae and broadly ellipsoid to subglobose basidiospores. *Trechispora suberosa* is a poroid species with corky basidiocarps, ovoid to subglobose basidiospores with a finely echinulate ornamentation, and the absence of crystals on hyphae.

Introduction

The Guangxi Autonomous Region is located in southern China and lies at the southeastern edge of the Yunnan-Guizhou Plateau, between 104°26'–112°04'E and 20°54'–26°24'N. The Tropic of Cancer runs through the centre of the region. Guangxi is elevated and 71% of its area consists of mountains and hills, which surround the Guangxi Basin, accounting for 27% of the region. The karst topography is widespread in Guangxi, covering 38% of the total area and mainly located in the northwest, southwest, northeast and middle parts of the region. The forest vegetation is varied and includes broad-leaved evergreen forests, deciduous broad-leaved forests, seasonal rainforests, etc. Forest covers up to 55% of the total area.

Recently, investigations on wood-decaying fungi in subtropical and tropical forests in China have been carried out, and numerous new species were described (Cui *et al.* 2009, 2011, Du & Cui 2009, Li & Cui 2010, Zhou & Jia 2010, Cui & Dai 2011, Jia & Cui 2011, He & Li 2011a, 2011b, Li & He 2011, Ma *et al.* 2011a, 2011b, Wang *et al.* 2011, Zhang *et al.* 2011, Zhao & Cui 2012, Zhou & Dai 2012). However, studies on the polypores from Guangxi have been very few, and only 58 species were previously recorded from this part of China (Zhao & Zhang 1992, Zhao 1998, Zhou & Dai 2008). During 2005, 2007, 2009 and 2011 nine localities in Guangxi Autonomous Region were investigated for wood-decaying fungi: (1) Maoershan Nature Reserve, (2) Huaping Nature Reserve, (3) Dayaoshan Nature Reserve, (4) Qingxiushan

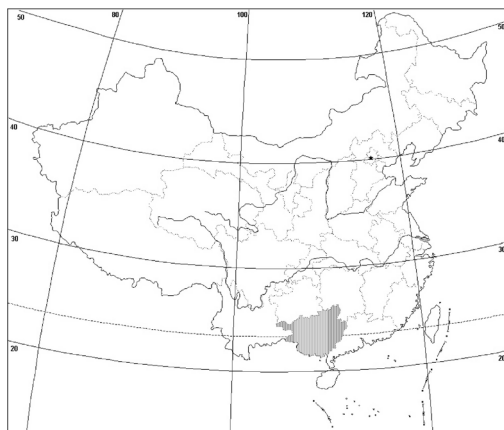


Fig. 1. The location of Guangxi Autonomous Region (shaded area) in China and the investigated areas (black dots).

Forest Park, (5) Liangfengjiang Forest Park, (6) Damingshan Forest Park, (7) Nonggang Nature Reserve, (8) Huashan Forest Park, (9) Beihai (Fig. 1).

During the identification of the collected specimens, three species were found to be new to science, and their illustrated descriptions are provided here. In addition, a checklist of the polypores in Guangxi with collection information is supplied.

Material and methods

The studied specimens are deposited at the biological herbarium of the Institute of Applied Ecology, Chinese Academy of Sciences (IFP). The microscopic procedure follows Dai (2010). Spores were measured from sections cut from the tubes. In presenting spore size data, 5% of the measurements were excluded from each end of the range, and are shown in parentheses. The abbreviations include IKI (Melzer's reagent, with IKI- = inamyloid), KOH (5% potassium hydroxide), and CB (Cotton Blue; CB+ = cyanophilous; CB- = acyanophilous). Additional abbreviations include *L* (mean spore length; arithmetic average of all spores), *W* (mean spore width; arithmetic average of all spores), *Q* (variation in the *L/W* ratios between the specimens studied), and *n* (number of spores measured from given number of specimens). The special colour terms follow Petersen (1996).

Results

Checklist

In the following, an alphabetical list of the Guangxi polypores is given. Substrates and collecting data are provided after the name of each species. The hosts are listed alphabetically, and in the case of the same host tree, they were arranged in this order: living tree, dead standing tree, fallen trunk, fallen branch, rotten woody debris, stump, root. The concept of polypores circumscribed here is in a wide sense, including all the aphylloroid fungi with a poroid fruiting body.

- Abortiporus biennis* (Bull.) Singer, fallen angiosperm trunk, Yuan 5864.
- Abundisporus fuscopurpureus* (Pers.) Ryvarden, fallen angiosperm trunk, Yuan 6006; angiosperm stump, Yuan 5945.
- Antrodia malicola* (Berk. & M.A. Curtis) Donk, fallen angiosperm trunk, Yuan 5699; fallen angiosperm branch, Yuan 5892, 5919.
- Antrodia albocinnamomea* Y.C. Dai & Niemelä, angiosperm stump, Yuan 5827.
- Antrodia aurantilaeta* (Corner) T. Hatt. & Ryvarden, fallen angiosperm branch, Yuan 5956.
- Antrodia brunneimontana* (Corner) T. Hatt., fallen angiosperm trunk, Zhou 59.
- Antrodia duracina* (Pat.) I. Lindblad & Ryvarden, dead standing angiosperm tree, Yuan 5963; fallen angiosperm trunk, Yuan 5687, 6007; angiosperm stump, Yuan 5890.
- Antrodia liebmanni* (Fr.) Ryvarden, fallen angiosperm trunk, Yuan 5777, 5790, 5811.
- Antrodia pendulina* H.S. Yuan, fallen angiosperm branch, Zhou 321; fallen angiosperm twig, Zhou 110, 119.
- Antrodia zonata* (Berk.) Ryvarden, dead standing angio-

- sperm tree, *Yuan* 5943; fallen angiosperm trunk, *Yuan* 5823, *Zhou* 441; fallen angiosperm branch, *Yuan* 5733, 5842; angiosperm stump, *Yuan* 5684.
- Auriporia aurulenta* David, Tortić & Jelić, fallen trunk of *Pinus*, *Dai* 6922.
- Bjerkandera adusta* (Willd.) P. Karst., living *Ficus* tree, *Dai* 6868; dead standing angiosperm tree, *Zhou* 442, 506; fallen angiosperm trunk, *Yuan* 5704, *Zhou* 421, 457.
- Bjerkandera fumosa* (Pers.) P. Karst., fallen angiosperm trunk, *Zhou* 434.
- Castanoporus castaneus* (Lloyd) Ryvar den, fallen trunk of *Pinus*, *Zhou* 627; fallen branch of *Pinus*, *Dai* 11482, *Zhou* 639.
- Ceriporia alachuana* (Murrill) Hallenb., fallen angiosperm trunk, *Zhou* 131; fallen angiosperm branch, *Zhou* 19, 121, 196.
- Ceriporia lacerata* N. Maek. et al., fallen angiosperm branch, *Yuan* 5876, *Zhou* 331; angiosperm stump, *Zhou* 563.
- Ceriporia spissa* (Schwein. ex Fr.) Rajchenb., fallen angiosperm branch, *Zhou* 114.
- Ceriporia viridans* (Berk. & Broome) Donk, fallen angiosperm trunk, *Yuan* 5743, 5965; fallen angiosperm branch, *Yuan* 5763, 6001, *Zhou* 108; rotten angiosperm wood, *Zhou* 470.
- Ceriporiopsis albonigrescens* Núñez, Parmasto & Ryvar den, rotten angiosperm wood, *Zhou* 93.
- Ceriporiopsis aneirina* (Sommerf.) Domański, fallen angiosperm trunk, *Zhou* 206.
- Coltricia cinnamomea* (Jacq.) Murrill, ground, *Yuan* 5653, 5658.
- Coltricia spina* Y.C. Dai, ground, *Yuan* 5954, 5966.
- Corioloopsis caperata* (Berk.) Murrill, fallen angiosperm branch, *Zhou* 74.
- Corioloopsis sanguinaria* (Klotzsch) Teng, dead standing angiosperm tree, *Yuan* 5779, 5837; fallen angiosperm trunk, *Yuan* 5796, 5798.
- Cyclomyces lamellatus* Y.C. Dai & Niemelä, fallen angiosperm twig, *Yuan* 5962.
- Cyclomyces setiporus* (Berk.) Pat., angiosperm stump, *Yuan* 5975.
- Cyclomyces tabacinus* (Mont.) Pat., fallen angiosperm trunk, *Yuan* 5753; fallen angiosperm branch, *Yuan* 6018.
- Cyclomyces xeranticus* (Berk.) Y.C. Dai & Niemelä, fallen angiosperm trunk, *Yuan* 5692.
- Daedaleopsis tricolor* (Bull.) Bondartsev & Singer, dead standing angiosperm tree, *Yuan* 5678; fallen angiosperm trunk, *Yuan* 6017.
- Datronia stereoides* (Fr.) Ryvar den, dead standing angiosperm tree, *Zhou* 81; fallen angiosperm trunk, *Yuan* 5874, 5998, *Zhou* 54; fallen angiosperm branch, *Yuan* 5745, 5868, 5877, 5886, 5924, 5957, *Zhou* 33, 70; rotten angiosperm wood, *Zhou* 167; angiosperm root, *Zhou* 62.
- Earliella scabrosa* (Pers.) Gilb. & Ryvar den, living angiosperm tree, *Yuan* 5939; dead standing angiosperm tree, *Yuan* 152; fallen angiosperm trunk, *Dai* 11481, *Zhou* 13, 55, 56, 61, 104, 154, 163, 193, 204, 555, 564, 612, 619; fallen angiosperm branch, *Zhou* 47, 71, 147, 188, 394; rotten angiosperm wood, 95, 106, 178; angiosperm stump, *Zhou* 12, 69, 88, 143.
- Echinoporia hydno-phora* (Berk. & Broome) Ryvar den, fallen angiosperm trunk, *Yuan* 5713, 5857; fallen angiosperm branch, *Yuan* 6021, *Zhou* 468, 475, 485, 549; fallen angiosperm twig, *Zhou* 505, 595.
- Favolaschia pustulosa* (Jungh.) Kuntze, fallen angiosperm trunk, *Zhou* 417.
- Flavodon flavus* (Klotzsch) Ryvar den, fallen angiosperm trunk, *Zhou* 18; fallen angiosperm branch, *Zhou* 301.
- Fomitiporia bannaensis* Y.C. Dai, fallen angiosperm branch, *Zhou* 51.
- Fomitiporia robusta* (P. Karst.) Fiasson & Niemelä, living *Pentaphylax* tree, *Yuan* 6012.
- Fomitopsis feei* (Fr.) Kreisel, fallen angiosperm trunk, *Dai* 6896.
- Fomitopsis pinicola* (Sw.) P. Karst., dead standing tree of *Pinus*, *Dai* 6916.
- Fomitopsis spraguei* (Berk. & M.A. Curtis) Gilb. & Ryvar den, living *Castanea* tree, *Yuan* 5964, 5970.
- Ganoderma australe* (Fr.) Pat., living angiosperm tree, *Dai* 11473; dead standing angiosperm tree, *Yuan* 5706, *Zhou* 320, 430, 512; fallen angiosperm trunk, *Dai* 6877, *Yuan* 5748, 5778, *Zhou* 217, 411, 576; rotten angiosperm wood, *Zhou* 166; angiosperm stump, *Zhou* 226, 253, 424, 446, 477, 557, 572, 609, 637; angiosperm root, *Zhou* 425.
- Ganoderma lucidum* (Curtis) P. Karst., ground, *Zhou* 439.
- Ganoderma multiplicatum* (Mont.) Pat., living angiosperm tree, *Zhou* 540.
- Ganoderma tropicum* (Jungh.) Bres., angiosperm stump, *Zhou* 269, 597.
- Ganoderma weberianum* (Bres. & Henn.) Steyaer, angiosperm stump, *Zhou* 604.
- Gloeophyllum imponens* (Ces.) Teng, living *Dimocarpus* tree, *Zhou* 10.
- Gloeoporus dichrous* (Fr.) Bres., dead standing angiosperm tree, *Zhou* 27, 64; fallen angiosperm trunk, *Dai* 11487, 11489, *Zhou* 342; fallen angiosperm branch, *Zhou* 384; rotten angiosperm wood, *Zhou* 176.
- Gloeoporus taxicola* (Pers.) Gilb. & Ryvar den, fallen branch of *Cunninghamia*, *Yuan* 5953.
- Grammothele fuligo* (Berk. & Broome) Ryvar den, fallen bamboo, *Yuan* 5860, 5899; bamboo stump, *Yuan* 5683, 5731.
- Grammothele lineata* Berk. & M.A. Curtis, fallen angiosperm trunk, *Yuan* 5933; rotten angiosperm wood, *Zhou* 67; angiosperm stump, *Yuan* 5894, *Zhou* 111.
- Haploporus alabamiae* (Berk. & Cooke) Y.C. Dai & Niemelä, fallen angiosperm trunk, *Dai* 6890; *Yuan* 5806; *Zhou* 473, 494, 507.
- Haploporus papyraceus* (Schwein.) Y.C. Dai & Niemelä, fallen angiosperm twig, *Zhou* 26.
- Heterobasidion ecrustosum* Tokuda et al., dead standing tree of *Pinus*, *Dai* 6915; stump of *Pinus*, *Zhou* 514, 534.
- Hexagonia apiaria* (Pers.) Fr., living *Dimocarpus* tree, *Zhou* 15; dead standing angiosperm tree, *Yuan* 5937, *Zhou* 83, 620, 630; fallen angiosperm branch, *Yuan* 5928, *Zhou* 109.
- Hexagonia glabra* (P. Beauv.) Ryvar den, fallen angiosperm branch, *Zhou* 220.
- Hexagonia tenuis* (Hook) Fr., fallen angiosperm trunk, *Zhou* 49, 84, 237, 591; fallen angiosperm branch, *Zhou* 139,

- 164, 241, 298, 380, 528, 535, 548, 556, 647, 651; fallen angiosperm twig, *Zhou* 343, 581.
- Hypodontia flavipora* (Cooke) Sheng H. Wu, fallen angiosperm trunk, *Dai* 6871, *Yuan* 5657, 5690, 5693, 5917, *Zhou* 2, 346, 395, 422, 436, 445, 460, 491, 587, 622; fallen angiosperm branch, *Yuan* 5696, *Zhou* 141, 142, 172, 211, 239, 373, 374, 375, 388, 401, 426, 428, 438, 462, 469, 573, 602, 644; fallen angiosperm twig, *Yuan* 5887, *Zhou* 89, 102, 162, 504, 551, 594, 601, 603; rotten angiosperm wood, *Dai* 6883, *Zhou* 86, 362, 617; angiosperm stump, *Zhou* 510, 553, 590; fallen branch of *Cunninghamia*, *Zhou* 483; fallen twig of *Cunninghamia*, *Zhou* 561; fallen trunk of *Pinus*, *Zhou* 646; fallen twig of *Pinus*, *Zhou* 605; fallen rattan branch, *Yuan* 5903.
- Hypodontia latitans* (Bourdot & Galzin) Ginns & M.N.L. Lefebvre, fallen angiosperm trunk, *Yuan* 5726, *Zhou* 65; fallen branch of *Pinus*, *Zhou* 611.
- Hypodontia ovispora* (Corner) T. Hatt., fallen angiosperm branch, *Yuan* 5816, *Zhou* 403; fallen angiosperm twig, *Zhou* 85, 334; angiosperm stump, *Yuan* 5818.
- Hypodontia radula* (Pers.) Langer & Vesterh., dead standing angiosperm tree, *Zhou* 398, 406; fallen angiosperm trunk, *Yuan* 5773, *Zhou* 443, 501; fallen angiosperm branch, *Yuan* 5730, 5891, *Zhou* 397, 404, 449, 498, 615, 650; rotten angiosperm wood, *Zhou* 306, 365; angiosperm stump, *Zhou* 593.
- Irpex lacteus* (Fr.) Fr. s.l., fallen angiosperm twig, *Zhou* 596.
- Junghuhnia crustacea* (Jungth.) Ryvardeen, fallen angiosperm trunk, *Zhou* 235, 410; fallen angiosperm branch, *Zhou* 75, 270, 303; fallen angiosperm twig, *Zhou* 283, 296, 304; angiosperm stump, *Zhou* 117, 158.
- Junghuhnia flabellata* H.S. Yuan & Y.C. Dai, fallen angiosperm trunk, *Yuan* 5828.
- Junghuhnia minor* H.S. Yuan, fallen angiosperm trunk, *Zhou* 408; fallen angiosperm branch, *Zhou* 151, 315, 364, 387; fallen angiosperm twig, *Zhou* 44, 490; rotten angiosperm wood, *Zhou* 34, 268, 285.
- Junghuhnia nitida* (Pers.) Ryvardeen, fallen trunk of *Cyclobalanopsis*, *Dai* 6905; fallen angiosperm trunk, *Yuan* 5670; fallen angiosperm branch, *Zhou* 416.
- Lenzites vespacea* (Pers.) Pat., dead standing angiosperm tree, *Yuan* 5698, 5838; fallen angiosperm trunk, *Dai* 6874, *Zhou* 431, 459; angiosperm stump, *Yuan* 5771, 5947.
- Leucophellinus hobsonii* (Cooke) Ryvardeen, living angiosperm tree, *Zhou* 180; fallen angiosperm trunk, *Zhou* 98; fallen angiosperm branch, *Yuan* 5994; living *Dimocarpus* tree, *Yuan* 5934, *Zhou* 5, 21, 23, 379.
- Megasporoporia major* (G.Y. Zheng & Z.S. Bi) Y.C. Dai, fallen angiosperm trunk, *Yuan* 5854; fallen angiosperm branch, *Zhou* 452, 478, 487; fallen angiosperm twig, *Zhou* 389.
- Megasporoporia minuta* Y.C. Dai & X.S. Zhou, fallen angiosperm branch, *Zhou* 205, 207; fallen angiosperm twig, *Zhou* 129, 405.
- Megasporoporia setulosa* (Henn.) Rajchenb., fallen angiosperm trunk, *Zhou* 24, 263; fallen angiosperm twig, *Zhou* 399.
- Megasporoporia subcavernulosa* Y.C. Dai & Sheng H. Wu, dead standing angiosperm tree, *Zhou* 73; fallen angiosperm trunk, *Zhou* 92, 132; fallen angiosperm branch, *Yuan* 5929, 5931, *Zhou* 191, 192, 209, 219, 288, 349, 569; fallen angiosperm twig, *Yuan* 5936, *Zhou* 35, 45, 174, 185, 190, 213, 216, 309, 358, 407; angiosperm stump, *Zhou* 68.
- Megasporoporia violacea* B.K. Cui & P. Du, fallen angiosperm branch, *Yuan* 5889.
- Melanoderma microcarpum* B.K. Cui & Y.C. Dai, fallen angiosperm twig, *Zhou* 32.
- Microporus affinis* (Blume & Nees) Kuntze, fallen angiosperm trunk, *Dai* 6884, 6894, *Yuan* 5689, *Zhou* 435, 448, 453, 455, 456, 461, 463; fallen angiosperm branch, *Yuan* 5772, 6005, *Zhou* 613; fallen angiosperm twig, *Zhou* 122, 182, 250, 292; rotten angiosperm wood, *Zhou* 467.
- Microporus subaffinis* (Lloyd) Imazeki, fallen angiosperm twig, *Zhou* 629.
- Microporus xanthopus* (Fr.) Pat., fallen angiosperm trunk, *Zhou* 42; fallen angiosperm branch, *Zhou* 312; fallen angiosperm twig, *Zhou* 367.
- Oxyporus corticola* (Fr.) Ryvardeen, fallen angiosperm trunk, *Yuan* 5826, *Zhou* 97.
- Oxyporus ginkgonis* Y.C. Dai, fallen angiosperm branch, *Zhou* 238; bamboo stump, *Zhou* 6.
- Oxyporus subulatus* Ryvardeen, living angiosperm tree, *Zhou* 208.
- Panellus pusillus* (Pers. ex Lév.) Burds. & O.K. Mill., fallen angiosperm branch, *Yuan* 5873, 5879; fallen angiosperm twig, *Yuan* 5793, *Zhou* 329, 355.
- Perenniporia corticola* (Corner) Decock, fallen angiosperm trunk, *Yuan* 5654.
- Perenniporia dendrohyphidia* Ryvardeen, fallen angiosperm trunk, *Zhou* 273.
- Perenniporia detritus* (Berk.) Ryvardeen, fallen angiosperm trunk, *Dai* 6891.
- Perenniporia narymica* (Pilát) Pouzar, dead standing angiosperm tree, *Zhou* 500; fallen angiosperm trunk, *Yuan* 6004.
- Perenniporia ochroleuca* (Berk.) Ryvardeen, living angiosperm tree, *Zhou* 559; dead standing angiosperm tree, *Zhou* 311, 606; fallen angiosperm trunk, *Dai* 11490, *Zhou* 50, 161; fallen angiosperm branch, *Yuan* 5915, 5996, *Zhou* 300, 333, 348, 536, 538, 541, 566, 589, 643; fallen angiosperm twig, *Yuan* 5872, *Zhou* 366, 525, 532, 625; rotten angiosperm wood, *Zhou* 645; rotten wood of *Pinus*, *Dai* 11486.
- Perenniporia tephropora* (Mont.) Ryvardeen, fallen angiosperm trunk, *Yuan* 5791, 5870, *Zhou* 308; fallen angiosperm branch, *Yuan* 5973, *Zhou* 583; fallen gymnosperm branch, *Zhou* 636; rotten angiosperm wood, *Zhou* 526.
- PHELLINUS cesatii* (Bres.) Ryvardeen, fallen angiosperm trunk, *Yuan* 5898; fallen angiosperm branch, *Yuan* 6008.
- PHELLINUS chryseus* (Lév.) Ryvardeen, fallen angiosperm trunk, *Yuan* 5859, 5986.
- PHELLINUS collinus* Y.C. Dai & Niemelä, living *Bombax* tree, *Yuan* 5935.
- PHELLINUS conchatus* (Pers.) Quéf., living *Salix* tree, *Dai* 11493.
- PHELLINUS contiguus* (Pers.) Pat., fallen angiosperm branch, *Zhou* 79.
- PHELLINUS ferreus* (Pers.) Bourdot & Galzin, fallen angiosperm trunk, *Yuan* 5665, 5843, 5861, *Zhou* 588; fallen angio-

- sperm branch, *Yuan* 5729, 5741, 5765, 5845, 5852, 5856, 5901, 5952, 5968, 5988, 6003, 6011, *Zhou* 372, 382, 502, 511, 542, 578, 598; fallen angiosperm twig, *Zhou* 492.
- Phellinus gilvus* (Schwein.) Pat., dead standing angiosperm tree, *Zhou* 508; fallen angiosperm trunk, *Yuan* 5788, 5959, *Zhou* 58, 267, 420, 437, 444, 509; fallen angiosperm branch, *Yuan* 5691, 5794, 5802, 5902, 5930, 5991, 6009, *Zhou* 38, 134, 314; fallen angiosperm twig, *Yuan* 5997; angiosperm stump, *Zhou* 489; rotten angiosperm wood, *Zhou* 579; fallen trunk of *Pinus*, *Dai* 11485.
- Phellinus inermis* (Ellis & Everhart) G. Cunn., living angiosperm tree, *Yuan* 5881; dead standing angiosperm tree, *Zhou* 295; fallen angiosperm trunk, *Dai* 11491, *Yuan* 5835, 5875, *Zhou* 351, 628; fallen angiosperm branch, *Yuan* 5722, 5747, 5817, 5867, 5895, 5993, *Zhou* 385, 516, 568, 607, 633; fallen gymnosperm branch, *Zhou* 520.
- Phellinus rhabarbarinus* (Berk.) G. Cunn., living angiosperm tree, *Dai* 11474, 11475, 11478, *Yuan* 5940, *Zhou* 648; dead standing angiosperm tree, *Yuan* 5995, *Zhou* 350, 618; fallen angiosperm trunk, *Zhou* 265; rotten angiosperm wood, *Zhou* 274; angiosperm stump, *Zhou* 175, 552, 558, 560, 567, 582, 608, 621, 640.
- Phellinus torulosus* (Pers.) Bourdot & Galzin, living angiosperm tree, *Zhou* 565; fallen trunk of *Pinus*, *Dai* 6917.
- Phellinus wahlbergii* (Fr.) A.D. Reid, angiosperm stump, *Zhou* 495.
- Phylloporia pectinata* (Klotzsch) Ryvarden, rotten angiosperm wood, *Zhou* 369; angiosperm root, *Zhou* 458.
- Physisporinus vitreus* (Pers.) P. Karst., rotten angiosperm wood, *Dai* 6899; angiosperm stump, *Yuan* 5677.
- Polyporus arcularius* (Batsch) Fr., dead standing angiosperm tree, *Zhou* 386; fallen angiosperm branch, *Yuan* 5719, *Zhou* 1, 222, 242, 575; fallen angiosperm twig, *Zhou* 80, 294, 368.
- Polyporus dictyopus* Mont., fallen angiosperm trunk, *Yuan* 5664, 5990; fallen angiosperm branch, *Yuan* 5783; fallen angiosperm twig, *Zhou* 341; rotten angiosperm wood, *Zhou* 361.
- Polyporus grammocephalus* Berk., fallen angiosperm trunk, *Yuan* 5815, *Zhou* 11; fallen angiosperm branch, *Yuan* 5878, *Zhou* 103, 125, 145, 240, 248, 291, 305, 330, 371, 376, 377; fallen angiosperm twig, *Zhou* 227, 245, 266, 282, 357.
- Polyporus hemicapnodes* Berk. & Broome, fallen angiosperm branch, *Yuan* 6010, *Zhou* 275.
- Polyporus mikawai* Lloyd, dead angiosperm tree, *Yuan* 5680.
- Polyporus minor* Z.S. Bi. & G.Y. Zheng, fallen angiosperm branch, *Zhou* 133.
- Polyporus mori* (Pollini) Fr., fallen angiosperm branch, *Zhou* 25, 287; fallen angiosperm twig, *Zhou* 290.
- Postia alni* Niemelä & Vampola, dead standing angiosperm tree, *Zhou* 515; fallen angiosperm trunk, *Yuan* 5958, *Zhou* 378; fallen angiosperm twig, *Zhou* 586.
- Postia caesia* (Schrad.) P. Karst., fallen trunk of *Cunninghamia*, *Yuan* 5668.
- Protomerulius caryae* (Schwein.) Ryvarden, fallen angiosperm branch, *Yuan* 5825; stump of *Cyclobalanopsis*, *Dai* 6926.
- Pycnoporus sanguineus* (L.) Murrill, fallen angiosperm trunk, *Dai* 6912, *Yuan* 5863; fallen angiosperm branch, *Yuan* 5739, 5941.
- Rigidoporus crocatus* (Pat.) Ryvarden, angiosperm stump, *Zhou* 454.
- Rigidoporus fibulatus* H.S. Yuan & Y.C. Dai, fallen angiosperm trunk, *Yuan* 5675; fallen angiosperm branch, *Yuan* 5707.
- Rigidoporus lineatus* (Pers.) Ryvarden, fallen angiosperm trunk, *Zhou* 144, 149, 157.
- Rigidoporus microporus* (Sw.) Overeem, angiosperm stump, *Yuan* 6015.
- Rigidoporus minutus* B.K. Cui & Y.C. Dai, fallen angiosperm trunk, *Yuan* 5810.
- Rigidoporus vincus* (Berk.) Ryvarden, fallen angiosperm trunk, *Zhou* 199, 221, 354; fallen angiosperm branch, *Zhou* 279.
- Sidera vulgaris* (Fr.) Miettinen (Miettinen & Larsson 2011), fallen angiosperm branch, *Zhou* 513, 614.
- Skeletocutis alutacea* (J. Lowe) Jean Keller, fallen angiosperm branch, *Zhou* 413, 476, 484; angiosperm stump, *Yuan* 5666, 5672.
- Skeletocutis luteolus* B.K. Cui & Y.C. Dai, fallen angiosperm branch, *Zhou* 322; rotten angiosperm wood, *Zhou* 43, 584.
- Skeletocutis nivea* (Jungh.) Jean Keller, dead standing angiosperm tree, *Zhou* 499; fallen angiosperm trunk, *Yuan* 5855, 5989, *Zhou* 400, 440; fallen angiosperm branch, *Dai* 6882, 6897, *Yuan* 5721, 5744, 5900, 5927, 5946, 5983, *Zhou* 328, 391; fallen angiosperm twig, *Yuan* 5784, *Zhou* 30, 183, 249, 427; rotten angiosperm wood, *Zhou* 396.
- Skeletocutis odora* (Sacc.) Ginns, fallen trunk of *Pinus*, *Dai* 6918, 6920.
- Skeletocutis stellae* (Pilát) Jean Keller, rotten wood of *Pinus*, *Dai* 6919; stump of *Pinus*, *Dai* 6924.
- Stromatoscypha fimbriata* (Pers.) Donk, angiosperm stump, *Yuan* 5836.
- Tinctoporellus epimiltinus* (Berk. & Broome) Ryvarden, dead standing angiosperm tree, *Zhou* 486; fallen angiosperm trunk, *Yuan* 5762, 5780, 5813, 5961, 5992, *Zhou* 423; rotten angiosperm wood, *Zhou* 530; angiosperm stump, *Yuan* 5967, *Zhou* 533.
- Trametes elegans* (Spreng.) Fr., dead standing angiosperm tree, *Yuan* 5686; fallen angiosperm trunk, *Zhou* 107; fallen angiosperm branch, *Yuan* 5724, *Zhou* 228, 252.
- Trametes modesta* (Kunze ex Fr.) Ryvarden, fallen angiosperm trunk, *Yuan* 5685, *Zhou* 53.
- Trametes pubescens* (Schumach.) Pilát, fallen angiosperm trunk, *Zhou* 48, 464.
- Trametes versicolor* (L.) Lloyd, fallen angiosperm trunk, *Dai* 6870, 6895, 11476, *Yuan* 5785, 5797, *Zhou* 8, 429; fallen angiosperm branch, *Zhou* 599; fallen angiosperm twig, *Zhou* 562; angiosperm stump, *Zhou* 105.
- Trametopsis cervina* (Schwein.) Tomšovský, fallen angiosperm trunk, *Zhou* 82; fallen angiosperm branch, *Yuan* 5981; fallen angiosperm twig, *Yuan* 5985.
- Trechispora suberosa* H.S. Yuan & Y.C. Dai, fallen angiosperm branch, *Zhou* 113, 123.
- Trichaptum abietinum* (Pers.) Ryvarden, fallen trunk of *Pinus*, *Dai* 6873, 6921, *Zhou* 522, 616, 641; fallen branch of *Pinus*, *Yuan* 5849, *Zhou* 537, 631; stump of

Pinus, Zhou 649.

Trichaptum brastagii (Corner) T. Hatt., living angiosperm tree, Yuan 5960; fallen angiosperm branch, Zhou 451.

Trichaptum byssogenum (Jungh.) Ryvar den; fallen angiosperm trunk, Zhou 16.

Trichaptum durum (Jungh.) Corner, fallen angiosperm trunk, Yuan 5865; angiosperm stump, Yuan 5831, Zhou 39.

Tyromyces chioneus (Fr.) P. Karst., fallen angiosperm trunk, Zhou 480; fallen angiosperm branch, Yuan 5751, 5912.

Tyromyces transformatus Núñez & Ryvar den, fallen angiosperm trunk, Zhou 465; fallen angiosperm branch, Zhou 415; rotten angiosperm wood, Zhou 488.

Wrightoporia avellanea (Bres.) Pouzar, rotten wood of *Pinus*, Dai 11484, 11488, 11492.

Wrightoporia casuarinicola Y.C. Dai & B.K. Cui, living *Casuarina* tree, Dai 6914.

New taxa

Junghuhnia flabellata H.S. Yuan & Y.C. Dai, *sp. nova* (Fig. 2)

MycoBank no.: MB 800246

Carpophorum annuum, *pileatum*. *Facies pororum mellea vel roseo-bubalina*; *pori rotundi vel angulati*, 10–12 per mm. *Systema hypharum dimiticum*, *hyphae generatoriae fibulatae*, *hyphae skeletales subiculi* 2.5–5 μm diam. *Sporae hyalinae*, *ellipsoideae*, 2.6–3.2 \times 1.9–2.4 μm .

TYPE: China. Guangxi Auton. Reg., Jinxiu County, Lianhuashan Mts., on fallen angiosperm trunk, 24 Aug. 2011 Yuan 5828 (holotype IFP). — PARATYPE: China. Hunan Province, Zhangjiajie, National Forest Park, on fallen angiosperm trunk, 17 Aug. 2010 Dai 11660 (IFP).

ETYMOLOGY: *Flabellata* (Lat.): flabelliform, referring to the shape of the basidiocarps.

FRUITBODY. Basidiocarps annual, pileate, flabelliform, single or imbricate, coriaceous, with more or less fragrant smell when fresh, corky when dry, up to 3 cm long, 2.5 cm wide and 2.5 mm thick; pileal surface cinnamon-buff to pinkish buff, glabrous to finely velutinate, concentrically zonate and shallowly sulcate; margin acute, slightly undulating. Pore surface pinkish buff to clay-buff upon drying; pores round to angular, 10–12 per mm; dissepiments thin, entire. Context cinnamon-buff, up to 1 mm thick. Tubes concolorous with pore surface, corky, up to 1.5 mm long.

HYPHAL STRUCTURE. Hyphal system dimitic; generative hyphae bearing clamp connections,

skeletal hyphae IKI–, CB+; tissue unchanged in KOH.

CONTEXT. Dominated by skeletal hyphae; generative hyphae hyaline, thin-walled, with occasional branches, 2–3.5 μm in diam; skeletal hyphae hyaline, thick-walled with a wide to narrow lumen, straight to flexuous, occasionally branched, loosely interwoven, 2.5–5 μm in diam.

TUBES. Generative hyphae infrequent, hyaline, thin-walled, occasionally branched, 2–3 μm in diam; skeletal hyphae dominant, hyaline, thick-walled with a narrow lumen to subsolid, rarely branched, interwoven, 2.5–4 μm in diam. Skel-etoystidia scarce to numerous, mostly present at dissepiments, clavate, thick-walled, originating from trama, embedded or projecting, heavily encrusted, 10–35 \times 5–7 μm (with encrustation); basidia barrel-shaped, bearing four sterigmata and a clamp connection at the base, 6.5–8 \times 4–5 μm ; basidioles in shape similar to basidia, but slightly smaller.

SPORES. Basidiospores small, ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–, (2.5–)2.6–3.2(–3.3) \times (1.8–)1.9–2.4 μm , $L = 2.89 \mu\text{m}$, $W = 2.13 \mu\text{m}$, $Q = 1.33–1.38$ ($n = 60/2$).

Junghuhnia flabellata is characterized by its flabelliform basidiocarps, tiny pores, small basidiospores and by the presence of skeletocystidia mostly in dissepiments. It is similar to *J. minuta* by having pileate, spatulate to fan-shaped basidiocarps, tiny pores and small, ellipsoid basidiospores. However, the latter species has cartilaginous bony hard basidiocarps, azonate, a pale reddish brown to resinous brown pileal surface, and its skeletocystidia are abundant in both trama and dissepiments (Lindblad & Ryvar den 1999).

Junghuhnia neotropica resembles *J. flabellata* in its fan-shaped basidiocarps and small pores and basidiospores, but it has cartilaginous bony hard basidiocarps, and its skeletocystidia are ventricose and smooth (Lindblad & Ryvar den 1999).

Rigidoporus fibulatus H.S. Yuan & Y.C. Dai, *sp. nova* (Fig. 3)

MycoBank no.: MB 800247

Carpophorum annuum, *resupinatum*. *Facies pororum cremea vel bubalina*; *pori rotundi vel*

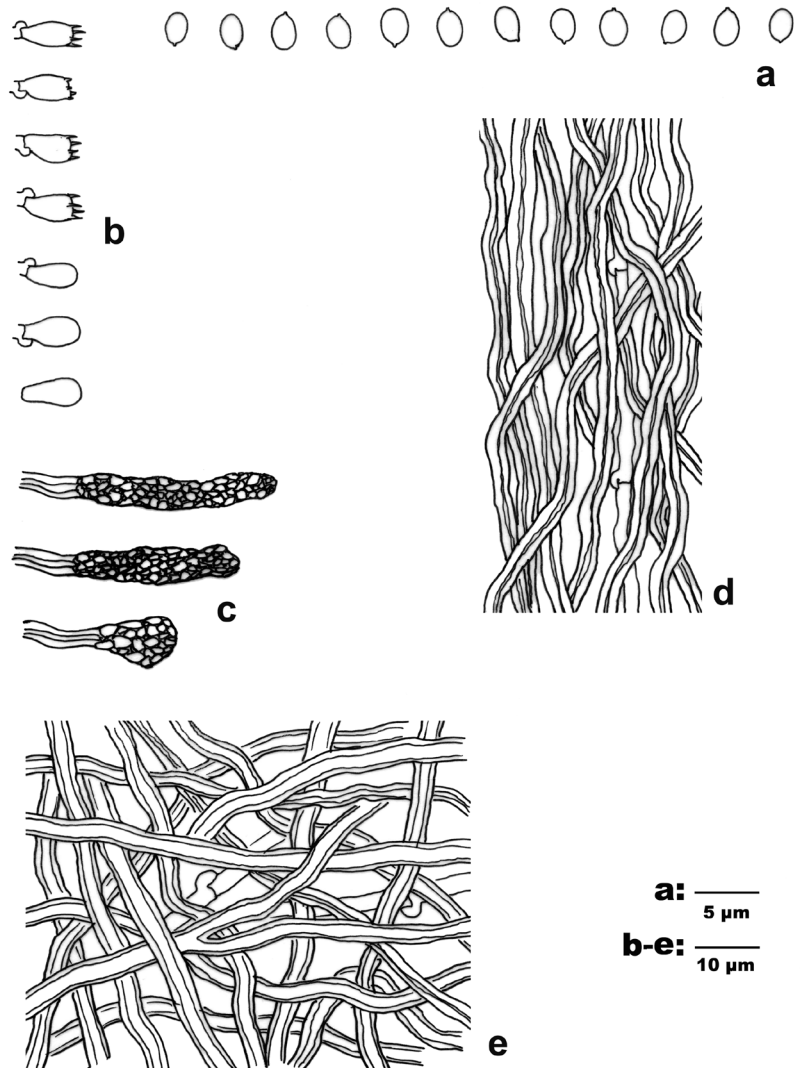


Fig. 2. Microscopic structures of *Junghuhnia flabellata* (drawn from the holotype). — **a:** Basidiospores. — **b:** Basidia and basidioles. — **c:** Skel-etocystidia. — **d:** Hyphae from trama. — **e:** Hyphae from context.

angulati, 5–7 per mm. *Systema hypharum monomiticum*, *hyphae generatoriae fibulatae*, *hyphae subiculi* 3–5.5 µm diam. *Sporae hyalinae, ellipsoideae vel subglobosae*, 3.9–4.3 × 3–3.5 µm.

TYPE: China. Guangxi Auton. Reg., Xing'an County, Maoershan Nat. Res., on fallen angiosperm trunk, 19 Aug. 2011 *Yuan* 5675 (holotype in IFP). — **PARATYPE:** China. Guangxi Auton. Reg., Xing'an County, Maoershan Nat. Res., on fallen angiosperm branch, 20 Aug. 2011 *Yuan* 5707 (IFP).

ETYMOLOGY: *Fibulatus* (Lat.): referring to generative hyphae bearing clamp connections.

FRUITBODY. Basidiocarps annual, resupinate, ceraceous, without special odour or taste when

fresh, cartilaginous and rigid when dry, up to 9 cm long, 1.5 cm wide and 2.5 mm thick; sterile margin almost lacking. Pore surface cream to pale buff when fresh, pinkish buff upon drying; pores round to angular, 5–7 per mm; dissepiments thin, entire. Subiculum olivaceous buff, semi-transparent and cartilaginous, up to 0.3 mm thick. Tubes concolorous with pore surface, ceraceous, up to 2.2 mm long.

HYPHAL STRUCTURE. Hyphal system monomitic; generative hyphae bearing clamp connections, IKI–, CB+; tissue unchanged in KOH.

SUBICULUM. Hyphae strongly agglutinated and difficult to separate for microscopic study;

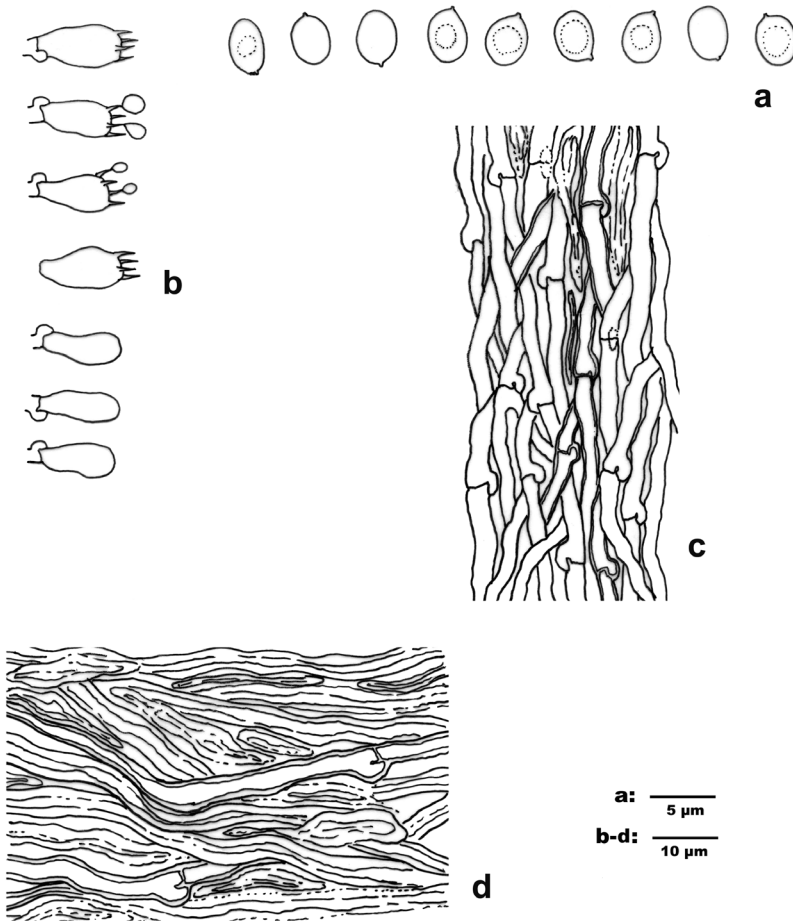


Fig. 3. Microscopic structures of *Rigidoporus fibulatus* (drawn from the holotype). — **a:** Basidiospores. — **b:** Basidia and basidioles. — **c:** Hyphae from trama. — **d:** Hyphae from subiculum.

generative hyphae hyaline, thin- to thick-walled, unbranched, 3–5.5 µm in diam.

TUBES. Hyphae partly agglutinated; generative hyphae hyaline, thin- to slightly thick-walled, occasionally branched, 2–3.5 µm in diam. Cystidia and cystidioles absent; basidia barrel-shaped, bearing four sterigmata and a clamp connection at the base, 10–13 × 5–6.5 µm; basidioles in shape similar to basidia, but slightly smaller.

SPORES. Basidiospores broadly ellipsoid to subglobose, hyaline, thin-walled, smooth, usually bearing a guttule, IKI–, CB–, (3.8–)3.9–4.3(–4.4) × 3–3.5(–3.7) µm, $L = 4.11$ µm, $W = 3.26$ µm, $Q = 1.24$ – 1.29 ($n = 60/2$).

Rigidoporus fibulatus is characterized by ceraceous to cartilaginous basidiocarps, clamp connections on the generative hyphae, and broadly ellipsoid to subglobose basidiospores. It lacks both cystidia and cystidioles.

The genera *Rigidoporus*, *Oxyporus* and *Physisporinus* all have a similar morphology, but are phylogenetically unrelated (Kim & Jung 2000, Binder *et al.* 2005). The species in the three genera have more or less globose basidiospores and a monomitic hyphal structure with simple septate generative hyphae except for *P. rivulosus*. It is difficult to define the generic limits among these taxa using morphology (Núñez & Ryvarden 2001, Dai & Wang 2005). Miettinen and Rajchenberg (2012) transferred *P. rivulosus* into a new genus *Obba*. Although the species in *Rigidoporus* have simple septa on generative hyphae, we included *Rigidoporus fibulatus* in the genus because of its agglutinated hyphae and subglobose spores. *Rigidoporus fibulatus* could alternatively be placed in *Ceriporiopsis*, *Oxyporus* or *Physisporinus*.

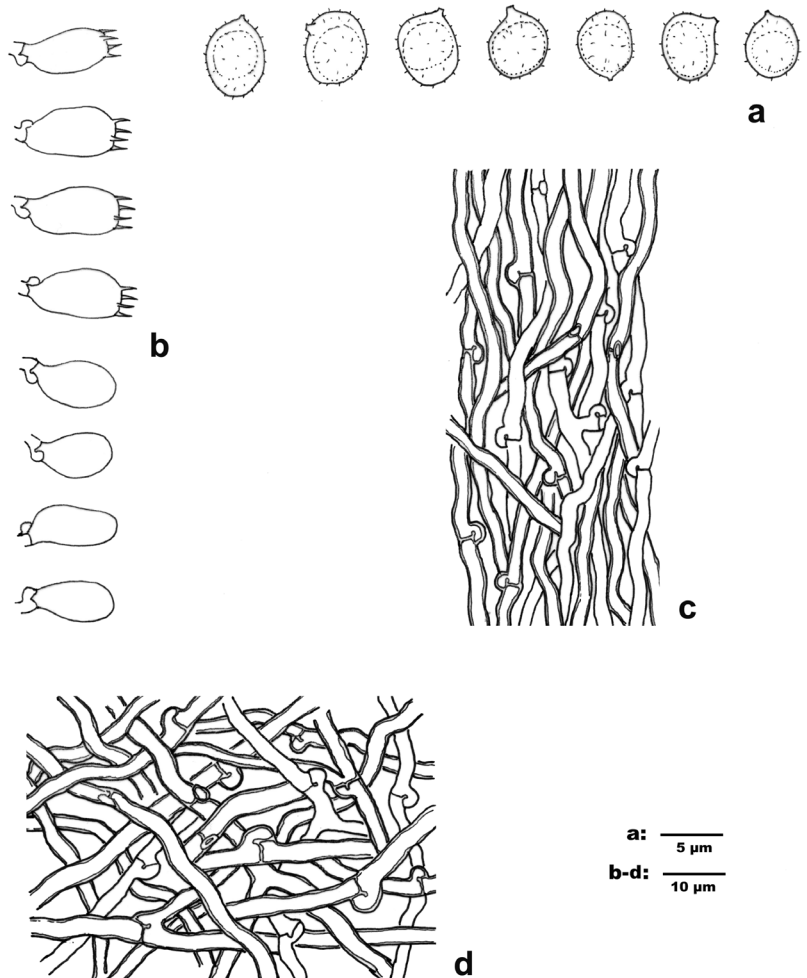


Fig. 4. Microscopic structures of *Trechispora suberosa* (drawn from the holotype). — **a:** Basidiospores. — **b:** Basidia and basidiospores. — **c:** Hyphae from trama. — **d:** Hyphae from subiculum.

Trechispora suberosa H.S. Yuan & Y.C. Dai, *sp. nova* (Fig. 4)

Mycobank no.: MB 800248

Carpophorum annuum, *resupinatum*. *Facies pororum bubalina vel mellea; pori angulati, 3–5 per mm. Systema hypharum monomiticum, hyphae generatoriae fibulatae, hyphae subiculi 2–4 µm diam. Sporae hyalinae, asperae, ovoidae vel subgloboasae, 5.2–6 × 4.4–5.1 µm.*

TYPE: China. Guangxi Auton. Reg., Longzhou County, Nonggang Nat. Res., on fallen angiosperm branch, 3 July 2007 *Zhou 123* (holotype in IFP). — PARATYPE: China. Guangxi Auton. Reg., Longzhou County, Nonggang Nat. Res., on fallen angiosperm branch, 3 July 2007 *Zhou 113* (IFP).

ETYMOLOGY: *Suberosa* (Lat.): referring to the corky basidiocarps.

FRUITBODY. Basidiocarps annual, resupinate, adnate, without special odour or taste when fresh, corky when dry, up to 8 cm long, 3 cm wide and 1.5 mm thick; sterile margin indistinct. Hymenophore poroid, pore surface buff to cinnamon-buff upon drying; pores angular, 3–5 per mm; dissepiments thin, slightly lacerate. Subiculum very thin, cream to buff, corky, up to 0.2 mm thick. Tubes concolorous with pore surface, corky, up to 1.3 mm long.

HYPHAL STRUCTURE. Hyphal system monomitic; generative hyphae bearing clamp connections, IKI–, CB+; tissue unchanged in KOH.

SUBICULUM. Generative hyphae hyaline, thin to slightly thick-walled, moderately branched, interwoven, 2–4 µm in diam.

TUBES. Generative hyphae hyaline, thin to slightly thick-walled, occasionally branched,

interwoven, 1.8–3.5 μm in diam. Cystidia and cystidioles absent; basidia barrel-shaped, bearing four sterigmata and a clamp connection at the base, 12–16 \times 6–8 μm ; basidioles pear-shaped and smaller than basidia.

SPORES. Basidiospores ovoid to subglobose, hyaline, thin-walled, with finely echinulate ornamentation, usually bearing a guttule, IKI–, CB–, (5.1–)5.2–6(–6.2) \times 4.4–5.1(–5.3) μm , $L = 5.51 \mu\text{m}$, $W = 4.78 \mu\text{m}$, $Q = 1.14–1.15$ ($n = 60/2$).

Trechispora suberosa is characterized by corky basidiocarps, thin- to slightly thick-walled generative hyphae without ampullate septa, and by lacking crystals. In addition, its spores bear a finely echinulate ornamentation, and the spines are less than 0.5 μm in length.

Seven poroid species in *Trechispora* have been previously described (Larsson 1992). *Trechispora brasiliensis* has a dimittic hyphal system; *T. polygonospora* has subangular and sparsely verrucose basidiospores; *T. regularis* has heavily encrusted cystidia in the hymenium. Therefore, those three species are readily separated from *T. suberosa*.

Trechispora mollusca, *T. hymenocystis* and *T. candidissima* have soft, fragile basidiocarps, ampullate septate generative hyphae and bipyramidic, rhomboid or rod-like crystals in their subiculum (Núñez & Ryvarde 2001). Consequently, they are easily distinguished from *T. suberosa*.

The basidiospores of *Trechispora clancularis* are similar in size to the new species, but *T. clancularis* differs by its soft and fragile basidiocarps, hyphae bearing grainy or bipyramidic, single or aggregated crystals, and slightly thick-walled basidiospores with 0.5–1 μm long spines (Larsson 1992).

A key character for *Trechispora* is the presence of ampullate septa, but *T. suberosa* lacks them. Some molecular data have been published for most species of *Trechispora* (Larsson *et al.* 2004). We did not get any sequences from *T. suberosa*, but its hyphal structure and spores fit the genus well.

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