



Fungal Planet description sheets: 558–624

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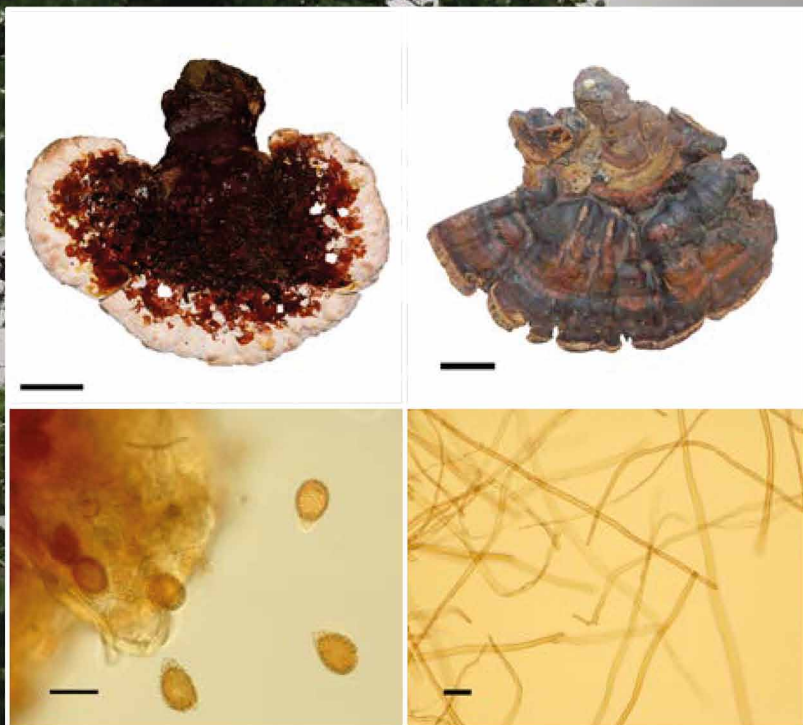
Key words

ITS nrDNA barcodes
LSU
novel fungal species
systematics

Abstract Novel species of fungi described in this study include those from various countries as follows: **Australia:** *Banksiophoma australiensis* (incl. *Banksiophoma* gen. nov.) on *Banksia coccinea*, *Davidiellomyces australiensis* (incl. *Davidiellomyces* gen. nov.) on *Cyperaceae*, *Didymocyrtis banksiae* on *Banksia sessilis* var. *cygnorum*, *Disculoides calophyllae* on *Corymbia calophylla*, *Harknessia banksiae* on *Banksia sessilis*, *Harknessia banksiae-repens* on *Banksia repens*, *Harknessia banksiigena* on *Banksia sessilis* var. *cygnorum*, *Harknessia communis* on *Podocarpus* sp., *Harknessia platyphyllae* on *Eucalyptus platyphylla*, *Myrtacremonium eucalypti* (incl. *Myrtacremonium* gen. nov.) on *Eucalyptus globulus*, *Myrtapendiella balenae* on *Eucalyptus* sp., *Myrtapendiella eucalyptigena* on *Eucalyptus* sp., *Myrtapendiella pleurocarpa* on *Eucalyptus pleurocarpa*, *Paraconiothyrium hakeae* on *Hakea* sp., *Paraphaeosphaeria xanthorrhoeae* on *Xanthorrhoea* sp., *Parateratosphaeria stirlingiae* on *Stirlingia* sp., *Perthomyces podocarpi* (incl. *Perthomyces* gen. nov.) on *Podocarpus* sp., *Readeriella ellipsoidea* on *Eucalyptus* sp., *Rosellinia australiensis* on *Banksia grandis*, *Tiarospora corymbiae* on *Corymbia calophylla*, *Verrucoconiothyrium eucalyptigenum* on *Eucalyptus* sp., *Zasmidium commune* on *Xanthorrhoea* sp., and *Zasmidium podocarpi* on *Podocarpus* sp. **Brazil:** *Cyathus aurantigriseocarpus* on decaying wood, *Perenniporia brasiliensis* on decaying wood, *Perenniporia paraguayensis* on decayed wood, and *Pseudocercospora leandrae-fragilis* on *Leandra fragilis*. **Chile:** *Phialocephala cladophialophoroides* on human toe nail. **Costa Rica:** *Psathyrella striatoannulata* from soil. **Czech Republic:** *Myotisia cremea* (incl. *Myotisia* gen. nov.) on bat droppings. **Ecuador:** *Humidicutis dictiocephala* from soil, *Hygrocybe macrosiparia* from soil, *Hygrocybe sangayensis* from soil, and *Polycephalomyces onorei* on stem of *Etlingera* sp. **France:** *Westerdykella centenaria* from soil. **Hungary:** *Tuber magentipunctatum* from soil. **India:** *Ganoderma mizoramense* on decaying wood, *Hodophilus indicus* from soil, *Keratinophyton turgidum* in soil, and *Russula arunii* on *Pterigota alata*. **Italy:** *Rhodocybe matesina* from soil. **Malaysia:** *Apharknessia eucalyptorum*, *Harknessia malayensis*, *Harknessia pellitae*, and *Peyronellaea eucalypti* on *Eucalyptus pellita*, *Lectera capsici* on *Capsicum annum*, and *Wallrothiella gmelinae* on *Gmelina arborea*. **Morocco:** *Neocardana musigena* on *Musa* sp. **New Zealand:** *Candida rongomai-pounamu* on agaric mushroom surface, *Candida vespimorsuum* on cup fungus surface, *Cylindrocladiella vitis* on *Vitis vinifera*, *Foliocryphia eucalyptorum* on *Eucalyptus* sp., *Ramularia vacciniicola* on *Vaccinium* sp., and *Rhodotorula ngohengohe* on bird feather surface. **Poland:** *Tolypocladium fumosum* on a caterpillar case of unidentified *Lepidoptera*. **Russia:** *Pholiotina longistipitata* among moss. **Spain:** *Coprinopsis pseudomarcescibilis* from soil, *Eremiomyces innocentii* from soil, *Gyroporus pseudocyanescens* in humus, *Inocybe parvicystis* in humus, and *Penicillium parvofructum* from soil. **Unknown origin:** *Paraphoma raphiolepidis* on *Rhaphiolepis indica*. **USA:** *Acidiella americana* from wall of a cooling tower, *Neodactylaria obpyriformis* (incl. *Neodactylaria* gen. nov.) from human bronchoalveolar lavage, and *Saksenaea loutrophoriformis* from human eye. **Vietnam:** *Phytophthora mekongensis* from *Citrus grandis*, and *Phytophthora prodigiosa* from *Citrus grandis*. Morphological and culture characteristics along with DNA barcodes are provided.

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Ganoderma mizoramense



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Ganoderma mizoramense Zothanzama, Blanchette, Held, C.W. Barnes, *sp. nov.*

Etymology. Named after the state of Mizoram, where it was found growing on a tree near Mizoram University in Aizawl, Mizoram, northeast India.

Classification — *Ganodermataceae*, *Polyporales*, *Agaricomycetes*.

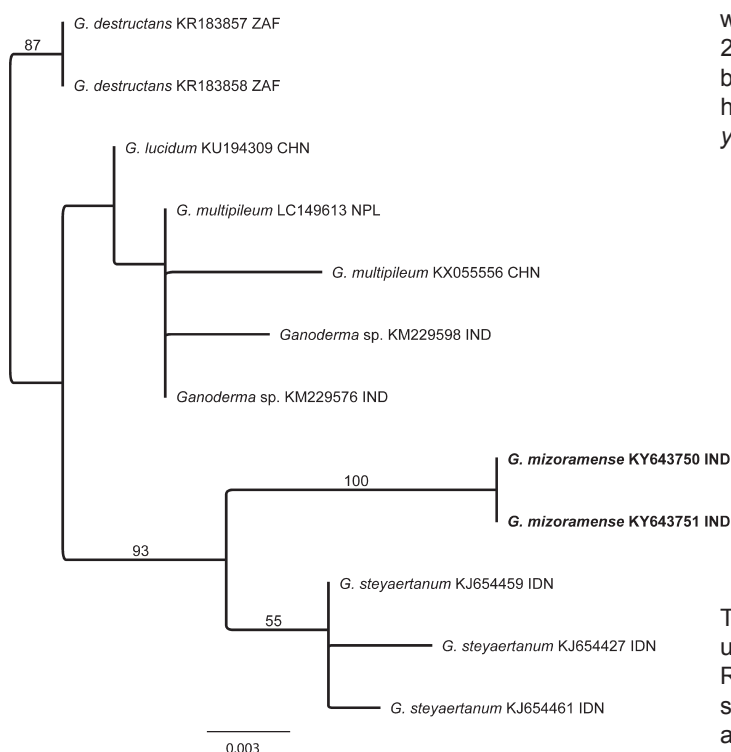
Mature *basidiomata* annual, pileate, stipitate, applanate, soft and leathery when fresh and woody to corky when dried, more or less flabelliform, semi-circular, irregular surface; absence of any 'growing zones'; dark brownish to dark reddish brown, homogenous context structure 2–20 mm. *Pileus* upper surface reddish brown when fresh, liver brown when dry, surface hard and glabrous, margin white, rounded, thickened, lower surface white when fresh, pale brown when dry. *Context* uniformly ochraceous or cinnamon, firm; tubes 1–12 mm long, dark brown, not stratified. *Stipe* sometimes absent, but more commonly present and often prominent; twisted and irregular; varnished and coloured like the cap; often bearing pores. *Pore surface* smooth, creamy to snuff brown when dry, *pores* 4–5 per mm, round to somewhat slightly oval, 187–278 × 134–228 µm (av. 229 × 191 µm; SD 19, 20; n = 50), dissepiments 33–88 µm (av. 56 µm; SD 14; n = 50). *Hyphal system* trimitic, generative hyphae hyaline, slightly thicker than skeletal hyphae with clamp

connections at very few places, no branching observed; skeletal hyphae most prevalent in the basidiocarp, 1.5–7 µm (av. 4.29 µm; SD 1.14; n = 50); binding hyphae hyaline and highly branched, 2–5.5 µm (av. 3.83 µm; SD 0.92; n = 50). *Basidia* tetrasterigmatic basidium. *Basidiospores* brown, ellipsoid with a truncate base, bitunicate, verruculose, 10–12.5 × 6–9 µm (av. 11.10 × 7.6 µm; SD 0.62, 0.54; n = 30). *Chlamydospores* not observed.

Culture characteristics — No live culture obtained.

Typus. INDIA, Mizoram State, on angiosperm trees in hill country near Aizawl, Mizoram, Apr. 2016, J.M.C. Vabeikhokhei & Zohmangaiha (holotype MIN 948145, holotype ITS sequence GenBank KY643750 and LSU sequence GenBank KY747490, MycoBank MB818802).

Notes — The complete ITS sequence of the *G. mizoramense* holotype was used for the BLASTn search. The first 22 highest blast hits were to *G. steyaertanum*. The first three were downloaded for phylogenetic analysis (Glen et al. 2014). The next highest scoring other *Ganoderma* species was an isolated *G. lucidum* sequence. The *G. lucidum* sequence plus a few other isolated sequences interspersed among additional *G. steyaertanum* sequences were downloaded for phylogenetic analysis, with *G. destructans* used for the outgroup. The final alignment was edited by hand for alignment errors. Sequences were trimmed to the ITS1, after the CATT motif (Schoch et al. 2014) and to the end of ITS2 to the CTCT/GACC motif described by Moncalvo & Buchanan (2008). *Ganoderma mizoramense* had 7 to 8 single bp differences, no gaps, from the three *G. steyaertanum* sequences included in the phylogenetic analysis.



Colour illustrations. Native trees and landscape in the Hill Country of Mizoram, India where the fungus was found on a dead tree, photo by Karlyn Eckman (background); young freshly collected basidiocarp; older basidiocarp; basidiospores by light microscopy; skeletal hyphae; Scale bars = 5 cm (basidiocarps), 10 µm (microscopic structures).

The phylogenetic tree with *G. mizoramense* was constructed using the Maximum Likelihood plugin PHYML in Geneious R9 (<http://www.geneious.com>; Kearse et al. 2012), and the substitution model determined by jModelTest (Posada 2008) according to Corrected Akaike Information Criterion (AICc). *Ganoderma destructans* (KR183857 and KR183858) is the outgroup. Bootstrap support values ≥ 50 % are given above branches. The phylogenetic position of *G. mizoramense* is indicated in **bold**. The *Ganoderma* species is followed by the sample ID and country code, in order of appearance: ZAF = South Africa; CHN = China; NPL = Nepal; IND = India; IDN = Indonesia.

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