

Pileate Poroid Fungi of Family *Polyporaceae* from Himachal Pradesh

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ABSTRACT

Pileate poroid members of family Polyporaceae are characterised by pileate basidiocarps with poroid hymenial surface; monomitic to dimitic to trimitic hyphal system; clamped generative hyphae; ellipsoid to cylindrical to allantoid, thin-walled, subhyaline, usually smooth, inamyloid basidiospores. Present study is based on 48 pileate poroid species, collected from the different localities of Himachal Pradesh and is causing white rot. It is pertinent to mention here that as many as 16 species (Corioloopsis aspera, C. caperata, Daedaleopsis confragosa, D. purpurea, Hapalopilus nidulans, Lenzites warnieri, Microporus vernicipes, Nigroporus durus, Polyporus alveolaris, P. melanopus, P. meridionalis, P. varius, Spongipellis spumeus, Trametes marianna, T. villosa and Tyromyces chioneus) are being reported for the first time from Himachal Pradesh, including 2 (Lenzites warnieri and Spongipellis spumeus), which are also new for the North Western Himalaya. The remaining 32 taxa are being re-reported from different districts as per their recent taxonomic position in accordance with Mycobank.

Keywords: Agaricomycetes; Agaricomycotina; Basidiomycota

1. INTRODUCTION

The pileate poroid members of family *Polyporaceae* (class-*Agaricomycetes* subphylum-*Agaricomycotina*, phylum-*Basidiomycota*) are characterized by hymenomycetous fruiting bodies, two to eight spored basidia and hymenium lining the walls of cohering tubes. Keeping in view large area under forest cover i.e. 14, 369 sq. km. and less number of taxa (38) of pileate, poroid fungi reported from the study area by the earlier workers [Bakshi et al. (1956), Bakshi & Singh (1961), Bakshi (1971), Thind & Rattan (1971), Dhanda (1977), Roy & De (1996), Sharma (2000, 2012), Prasher & Ashok (2013)], study of these fungi is being undertaken.

2. MATERIAL AND METHODS

The present work is based on collections made from different localities of Himachal Pradesh, during the monsoon months of years 2009-2012. Macroscopic features like type and colour of the hymenial, abhymenial surfaces and margins, shape and number of pores per mm has been noted down. Microscopic characters are observed in compound microscope by making crush mounts and

free hand sections in water and 3%, 5% KOH which are stained in 1% Congo red in distilled water, 1% Phloxine in distilled water, Cotton Blue, Melzer's Reagent and in some cases in Sulphovanillin in the permanent laboratory in department of Botany, Punjabi university Patiala. Diagrams of the microscopic structures are drawn on white paper sheets using camera lucida. The color standards used are according to Kornerup and Wanscher (1978). The specimens of all these species are deposited at the Herbarium, Botany Department, Punjabi University, Patiala (PUN), India.

3. OBSERVATIONS

3.1 New Records for Himachal Pradesh

- *Corioloopsis aspera* (Jungh.) Teng, Zhong Guo De Zhen Jun [Fungi of China]: 759, 1963. – *Polyporus asper* Jungh., Praemissa in floram cryptogamicam Javae insulae: 60, 1838.
- Collections examined: Harpreet 5203 (PUN) and Dhingra 5215 (PUN).
- *Corioloopsis caperata* (Berk.) Murrill, North American Flora 9 (2): 77, 1908. – *Polyporus caperatus* Berk., Annals and Magazine of Natural History 3: 391, 1839.
- Collection examined: Harpreet 5201 (PUN).
- *Daedaleopsis confragosa* (Bolton) J. Schröt., Kryptogamen-Flora von Schlesien, 3–1(4): 493, 1888. – *Boletus confragosus* Bolton, An History of Fungusses, Growing about Halifax, App.: 160, 1792
- Collection examined: Harpreet 5550 (PUN).
- *Daedaleopsis purpurea* (Cooke) Imazeki & Aoshima, Flora of Eastern Himalaya: 619, 1966. – *Trametes purpurea* Cooke, Grevillea 10 (56): 121, 1882.
- Collection examined: Harpreet 5859 (PUN).
- *Hapalopilus nidulans* (Fr.) P. Karst., Revue Mycologique Toulouse 3 (9): 18, 1881. – *Polyporus nidulans* Fr., Systema Mycologicum 1: 362, 1821.
- Collections examined: Harpreet 5308 (PUN), Harpreet 5307 (PUN) and Harpreet 5306 (PUN).
- *Lenzites warnieri* Durieu & Mont., Annales des Sciences Naturelles Botanique 14: 182, 1860.
- Collection examined: Harpreet 5806 (PUN).
- *Microporus vernicipes* (Berk.) Kuntze, Revis. gen. pl. (Leipzig) 3(2): 497, 1898 – *Polyporus vernicipes* Berk., J. Linn. Soc., Bot. 16 (89): 50, 1878.
- Collections examined: Harpreet 5509 (PUN) and Dhingra 5510 (PUN).
- *Nigroporus durus* (Jungh.) Murrill, Bulletin of the Torrey Botanical Club 34: 471, 1907. – *Polyporus durus* Jungh., Praemissa in floram cryptogamicam Javae insulae: 62, 1838.
- Collections examined: Harpreet 5239 (PUN), Dhingra 5202 (PUN) and Harpreet 5240 (PUN)
- *Polyporus alveolaris* (DC.) Bondartsev & Singer, Annales Mycologici 39(1): 58, 1941. – *Merulius alveolaris* DC., in de Candolle & Lamarck, Flore française 6: 43, 1815.
- Collections examined: Harpreet 5292 (PUN) and Harpreet 5291 (PUN).
- *Polyporus melanopus* (Pers.) Fr., Systema Mycologicum 1: 347, 1821. – *Boletus melanopus* Pers., Neues Magazin für die Botanik 70, 1797.
- Collection examined: Harpreet 5294 (PUN).

- *Polyporus meridionalis* (A. David) H. Jahn, Westfälische Pilzbriefe 11(7): 176, 1980. – *Leucoporus meridionalis* A. David, Bull. trimest. Soc. mycol. Fr. 88(3–4): 301, 1973.
- Collections examined: Harpreet 5287 (PUN) and Harpreet 5286 (PUN).
- *Polyporus varius* (Pers.) Fr., Systema Mycologicum 1: 352, 1821. – *Boletus varius* Pers., Observationes mycologicae 1: 85, 1796.
- Collection examined: Harpreet 4747 (PUN).
- *Spongipellis spumeus* (Sowerby :Fr.) Pat., Ess. Tax.: 84, 1900. – *Polyporus spumeus* Sowerby: Fr., Systema Mycologicum 1: 358, 1821.
- Collection examined: Harpreet 5269 (PUN).
- *Trametes marianna* (Pers.) Ryvar, Persoonia 7(2): 309, 1973. – *Polyporus mariannus* Pers., Botanique (Nagpur) 5: 173, 1827.
- Collection examined: Harpreet 5310 (PUN) and Dhingra 5311 (PUN).
- *Trametes villosa* (Sw.) Kreisel, Monografias Ciencias Universidad de Habana 16: 83, 1971. – *Boletus villosus* Sw., Nova genera et species Plantarum seu prodromus descriptionum vegetabilium maximam parte incognitorum qua sub itinere in Indiam Occidentalem annis 1783–1787 digessit Olof Swartz M.D.: 148, 1788.
- Collection examined: Harpreet 5693 (PUN)
- *Tyromyces chioneus* (Fr.) P. Karst, Revue Mycologique Toulouse 3(9): 17, 1881. – *Polyporus chioneus* Fr. Observationes mycologicae 1: 125, 1815.
- Collection examined: Harpreet 5622 (PUN)

3.2 Re-reports for Himachal Pradesh

32 species listed alphabetically in table 1 are being re-reported from Himachal Pradesh.

Table 1. Re-reported species for Himachal Pradesh

Sr. No.	Name of re-reported species from Himachal Pradesh as per mycobank.org
1.	<i>Coriopsis gallica</i> (Fr.) Ryvar.
2.	<i>Earliella scabrosa</i> (Pers.) Gilb. & Ryvar.
3.	<i>Datronia mollis</i> (Sommerf.) D.
4.	<i>Fomes fomentarius</i> (L.) Fr.
5.	<i>Hexagonia tenuis</i> (Hook.) Fr.
6.	<i>Lenzites betulina</i> (L.) Fr.
7.	<i>Lenzites elegans</i> (Spreng.) Pat.
8.	<i>Microporus xanthopus</i> (Fr.) Kunt.
9.	<i>Nigrofomes melanoporus</i> (Mont.) Murr.
10.	<i>Nigroporus vinosus</i> (Berk.) Murr.
11.	<i>Perenniporia martia</i> (Berk.) Ryvar.

12.	<i>Perenniporia ochroleuca</i> (Berk.) Ryvar.
13.	<i>Perenniporia tephropora</i> (Mont.) Ryvar.
14.	<i>Polyporus arcularius</i> (Batsch) Fr.
15.	<i>Polyporus grammacephalus</i> Berk.
16.	<i>Pycnoporus cinnabarinus</i> (Jacq.) Karst.
17.	<i>Skeletocutis amorphia</i> (Fr.) Kotl. & Pouzar
18.	<i>Trametes cingulata</i> Berk.,
19.	<i>Trametes cotonea</i> (Pat. & Har.) Ryvar.
20.	<i>Trametes gibbosa</i> (Pers.) Fr.
21.	<i>Trametes hirsuta</i> (Wulfen) Lloyd
22.	<i>Trametes lactinea</i> (Berk.) Sacc.
23.	<i>Trametes leonina</i> (Klotzsch) Imazeki
24.	<i>Trametes menziesii</i> (Berk.) Ryvar.
25.	<i>Trametes ochracea</i> (Pers.) Gilb. & Ryvar.
26.	<i>Trametes pubescens</i> (Schumach.) Pil.
27.	<i>Trametes tephroleuca</i> Berk.,
28.	<i>Trametes trogii</i> Berk.,
29.	<i>Trametes versicolor</i> (L.) Ll.
30.	<i>Trichaptum abietinum</i> (Pers.: J.F. Gmel.) Ryvar.
31.	<i>Trichaptum bifforme</i> (Fr.) Ryvar.
32.	<i>Trichaptum byssogenum</i> (Jungh.) Ryvar.

4. CONCLUSION

Out of 48 pileate poroid species worked out, as many as 16 species (*Corioloopsis aspera*, *C. caperata*, *Daedaleopsis confragosa*, *D. purpurea*, *Hapalopilus nidulans*, *Lenzites warnieri*, *Microporus vernicipes*, *Nigroporus durus*, *Polyporus alveolaris*, *P. melanopus*, *P. meridionalis*, *P. varius*, *Spongipellis spumeus*, *Trametes marianna*, *T. villosa* and *Tyromyces chioneus*) are being reported for the first time from Himachal Pradesh, including 2 (*Lenzites warnieri* and *Spongipellis spumeus*), which are also new for the North Western Himalaya.

The remaining 32 taxa (*Corioloopsis gallica*, *Datronia mollis*, *Earliella scabrosa*, *Fomes fomentarius*, *Hexagonia tenuis*, *Lenzites betulina*, *L. elegans*, *Microporus xanthopus*, *Nigrofomes melanopus*, *Nigroporus vinosus*, *Perenniporia martia*, *P. ochroleuca*, *P. tephropora*, *Polyporus*

arcularius, *P. grammacephalus*, *Pycnoporus cinnabarinus*, *Skeletocutis amorpha*, *Trametes cingulata*, *T. cotonea*, *T. gibbosa*, *T. hirsuta*, *T. lactinea*, *T. leonina*, *T. menziesii*, *T. ochracea*, *T. pubescens*, *T. tephroleuca*, *T. versicolor*, *Trichaptum abietinum*, *T. bifforme*, *T. byssogenum*) are being re-reported.

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