

Morphotaxonomic Characterization of *Pycnoporus Sanguineus* from the Non-Core Region of Melghat, Amravati District, Maharashtra, India

Shrikant A. Shelke

Department of Botany, Shri Shivaji Science College, Amravati, Maharashtra, India

Abstract

The present study documents *Pycnoporus sanguineus* (L.) Murrill from the non-core region of Melghat, Amravati District, Maharashtra, India, based on macromorphological and microscopic characters. The species was characterised by annual, sessile, orange-red to reddish-orange, flabelliform basidiomata with a concolorous poroid hymenophore. Microscopic examination revealed a trimitic hyphal system with clamped generative, skeletal and branched binding hyphae. Basidiospores were hyaline, smooth, thin-walled and cylindrical to slightly curved, with cystidia absent. The specimen occurred on dead woody substrate. The observed characters support its identification as *P. sanguineus* and contribute to the documentation of poroid fungal diversity in the non-core region of Melghat.

Keywords: *Pycnoporus sanguineus*, Polyporaceae, poroid fungi, morphotaxonomy, Melghat, Maharashtra, white rot.

1. Introduction

Pycnoporus sanguineus is a conspicuous wood-inhabiting polypore recognized by its bright orange-red to reddish-orange basidiomata. The species has traditionally been placed in the genus *Pycnoporus* and belongs to the family Polyporaceae. Its identification is primarily based on the combination of macromorphological characters, including basidiocarp colour, pileus shape, pore characteristics and context, together with microscopic features such as the trimitic hyphal system and basidiospore morphology. The nomenclatural history of *P. sanguineus* has recently been reviewed by Gurgel et al. (2023).

The species is widely associated with dead woody substrates in tropical and subtropical regions and is recognized as a white-rot fungus. Although poroid fungi are important components of woody ecosystems, information concerning their occurrence and distribution in the Melghat region remains limited. The present study therefore aims to document the occurrence and morphotaxonomic characteristics of *P. sanguineus* from the non-core region of Melghat, Amravati District, Maharashtra.

2. Materials and Methods

Field surveys were conducted in selected localities of the non-core region of Melghat, Amravati District, Maharashtra, India. Basidiomata occurring on dead woody substrates were collected and photographed in

their natural habitat. Macromorphological characters such as basidiocarp habit, pileus shape, colour, surface, margin, pore surface, pore density, tube layer and context were recorded from fresh specimens. For microscopic examination, thin sections of the pileus, context and hymenophore were prepared and examined under a compound microscope. The hyphal system, basidia, basidioles and basidiospores were studied. Microscopic structures were measured and documented.

Specimen examined: Maharashtra, Amravati District, Melghat, non-core region. Chikhaldara Road, Tq. Chikhaldara, Dist. Amravati, Maharashtra, India, on 5 October 2025, on the trunk of *Mangifera indica* L. (Anacardiaceae), collected by S. A. Shelke, specimen ID: SAS/SSC-188.

3. Taxonomic Treatment

Pycnoporus sanguineus (L.) Murrill

Basionym: *Boletus sanguineus* L. **Basidiomata:** Annual, sessile, laterally attached, thin, coriaceous to leathery, dimidiate to flabelliform (in the early stage it shows a resupinate habit), occurring singly or in overlapping groups. **Pileus:** Orange-red to reddish-orange, 30-80 mm wide, up to 5-15 mm thick at base, surface smooth to finely tomentose, margin thin and entire to slightly wavy. Colour remains conspicuous even after drying. **Hymenophore:** Poroid, orange-red to reddish-orange and generally concolourous with the pileus. Pores circular to slightly angular, 3-5 pores per mm. Tubes 1-3 mm long, concolourous with pore surface; not stratified (annual growth). **Context:** Thin, corky to leathery, orange to reddish orange; tough when fresh, hard and brittle when dry; duplex context absent, approximately 2-8 mm thick. **Hyphal system:** Trimitic. Generative hyphae hyaline, thin-walled, septate and clamped. Skeletal hyphae thick-walled and predominantly unbranched. Binding hyphae: thick-walled and branched. **Basidia:** Not found. **Basidioles:** $10.5-13 \times 3.5-6 \mu\text{m}$, clavate, with basal clamp. **Cystidia:** Absent. **Basidiospores:** Hyaline, smooth, thin-walled, cylindrical to slightly curved, non-amyloid, measuring $5-7 \times 2-3 \mu\text{m}$.

Fig. 1. *Pycnoporus sanguineus*

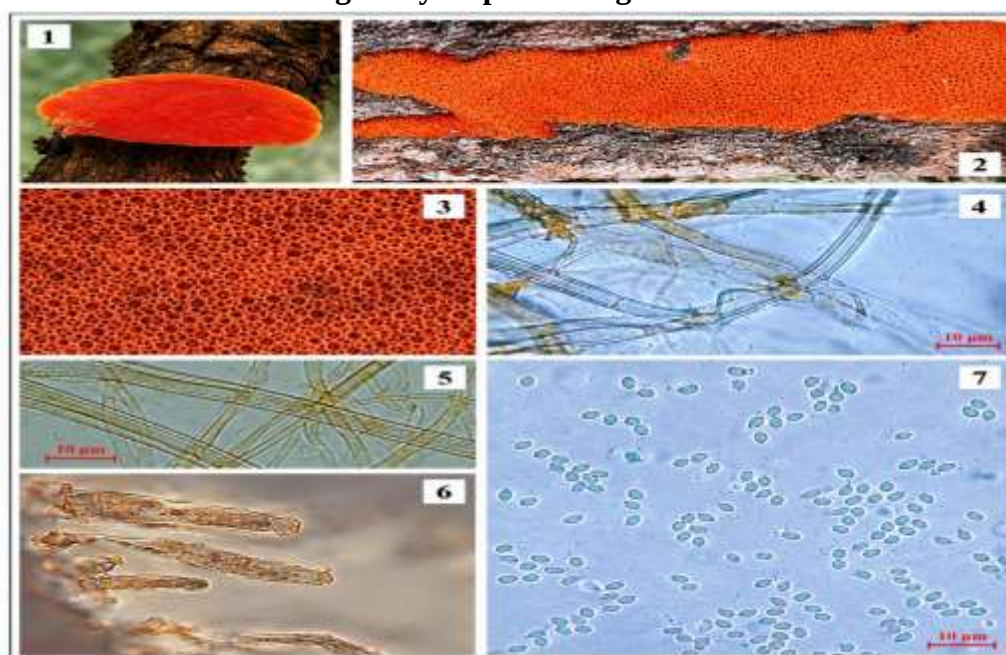


Fig. 1. Morphotaxonomic characteristics of *Pycnoporus sanguineus*. 1 & 2. Basidiomata Habitat, 3. Hymenial Pore surface, 4. Generative hyphae, 5. Skeletal hyphae, 6. Basidioles, 7. Basidiospores.

4. Taxonomic Remarks

The specimen is readily recognised by its characteristic bright orange-red basidiomata, thin sessile flabelliform pilei and concolourous poroid hymenophore. The trimitic hyphal system, presence of clamped generative hyphae, skeletal and binding hyphae, absence of cystidia and cylindrical to slightly curved hyaline basidiospores provide important microscopic characters for identification. Published descriptions generally report basidiospores approximately $5\text{--}6 \times 2\text{--}2.5 \mu\text{m}$ and a trimitic hyphal system (Ryvarden & Gilbertson, 1994). Indian material has also been reported with comparable morphological characters.

The combination of the observed macroscopic and microscopic characters supports the identification of the Melghat specimen as *Pycnoporus sanguineus*. The nomenclatural history of the species and its relationship with names used in other generic combinations have been discussed by Gurgel et al. (2023).

5. Ecology and Distribution

The present specimen was recorded from the **non-core region of Melghat, Amravati District, Maharashtra**, growing on dead woody material. The occurrence on dead wood is consistent with the known saprotrophic habit of the species. As a white-rot fungus, *P. sanguineus* contributes to the decomposition of woody material and nutrient cycling in terrestrial ecosystems.

The bright coloration and characteristic morphology make this species one of the more conspicuous poroid fungi encountered on dead wood in tropical environments.

6. Conclusion

The present investigation confirms the occurrence of *Pycnoporus sanguineus* in the region of Melghat, Amravati District, Maharashtra, based on its characteristic macromorphological and microscopic features. The orange-red basidiomata, poroid hymenophore and trimitic hyphal system with cylindrical to slightly curved basidiospores are important diagnostic characters. The record adds to the available information on poroid fungi of the Melghat region and provides a basis for further taxonomic, ecological and molecular investigations.

References

1. Bala, B. (2023). Diversity of bracket fungi (Basidiomycota: Agaricomycetes: Polyporaceae) in Jammu Division, Jammu & Kashmir, India. *Journal of Threatened Taxa*, 15(4), 22968–22989.
2. Gilbertson, R. L., & Ryvarden, L. (1987). North American polypores (Vol. 2: Megasperoporia–Wrightoporia). *Fungiflora*.
3. Gurgel, R. A. F., Carvalho, C. S., Ishikawa, N. K., & Cabral, T. S. (2023). Nomenclatural review and history of *Pycnoporus* (Polyporaceae): A widespread, bright-reddish genus in Basidiomycota. *Phytotaxa*, 589(3), 296–300.
4. Justo, A., Miettinen, O., Floudas, D., Ortiz-Santana, B., Sjökvist, E., Lindner, D., Nakasone, K. K., Niemelä, T., Larsson, K.-H., Ryvarden, L., & Hibbett, D. S. (2017). A revised family-level classification of the Polyporales (Basidiomycota). *Fungal Biology*, 121(9), 798–824.
5. Linnaeus, C. (1763). *Species plantarum* (2nd ed., Vol. 2, p. 1646).
6. Lomascolo, A., Uzan-Boukhris, E., Herpoël-Gimbert, I., Sigoillot, J.-C., & Lesage-Meessen, L. (2011). Peculiarities of *Pycnoporus* species for applications in biotechnology. *Applied Microbiology and Biotechnology*, 92, 1129–1149.

7. Murrill, W. A. (1904). The Polyporaceae of North America—VIII. Hapalopilus, Pycnoporus and new monotypic genera. Bulletin of the Torrey Botanical Club, 31(8), 415–428.
8. Nobles, M. K., & Frew, B. P. (1962). Studies in wood-inhabiting hymenomycetes. V. The genus Pycnoporus Karsten. Canadian Journal of Botany, 40, 987–1016.
9. Ryvarden, L. (2015). Neotropical polypores: Part 2. Polyporaceae s.l. Synopsis Fungorum.
10. Ryvarden, L., & Gilbertson, R. L. (1993). European polypores: Part 1. Abortiporus–Lindtneria. Fungiflora.
11. Ryvarden, L., & Johansen, I. (1980). A preliminary polypore flora of East Africa. Fungiflora.
12. Tarafder, E., Dutta, A. K., Pradhan, P., Mondal, B., Chakraborty, N., Paloi, S., Roy, A., & Acharya, K. (2017). Contribution to the macromycetes of West Bengal, India: 13–17. Research Journal of Pharmacy and Technology, 10(4), 1123–1130