

Two new black mildews from Mahabaleshwar, Maharashtra, India

V. B. Hosagoudar*, P. J. Robin and G. R. Archana

Tropical Botanic Garden and Research Institute, Palode 695 562, Thiruvananthapuram (Kerala), INDIA

*Corresponding author. E-mail: vbhosagoudar@rediffmail.com

Abstract: This paper gives an account of two new black mildews, namely, *Asterina prataparajii* and *Meliola mahamulkarii*, infected the leaves of *Tylophora dalzellii* and *Osyris arborea*, respectively, were found new and are described and illustrated here in detail.

Keywords: Black mildews, *Asterina*, *Meliola*, New species, Mahabaleshwar

INTRODUCTION

Melcolm Peth, Nahar or Mahabaleshwar, a holy abode of Lord Shiva, termed as 'Mild Paradise of Beauty', is located in Satara district of Maharashtra, at 17° 51' NL and 73° 30' EL, spreads to 150 sq km, at altitude of 4500 ft. with highest Wilson point of 4710 ft., having rainfall ranging from 107 to 402 inches, temperature from 17 to 26° C. This place harbours 'hill top shola or montane forest' and an account of the flowering plants and its adjoining area was dealt by Deshpande *et al.* (1993). Several attempts have been made to study the fungi of this region (Patil and Thite, 1980-81; Ursekar, 1977; Kamat *et al.*, 1971; Srinivasulu, 1974) but a thorough survey and its systematic account of the fungal flora is awaited. As a part of the study of Asterinales of India, authors collected several foliicolous fungi in Kas Lake, Mahabaleshwar and nearby places in Satara district. Of these, only an account of two new black mildews is dealt herewith.

Taxonomy

Asterina prataparajii V.B. Hosagoudar, P.J. Robin and G.R. Archana, sp. nov. (Fig.1). Etymology: Named in honour of Dr. Pratapraj Chavan, teacher of the senior author (vbh).

Coloniae hypophyllae, subdensae, ad 3 mm diam., plerumque confluentes. Hyphae flexuosae, opposite vel alternatim acuteque ramosae, laxae vel arte reticulatae, cellulae 17-22 x 3-4 µm. Appressoria numerosa, alternata, bi-cellula, antrorsa vel subantrosa, 12-16 µm longa; cellulae basillares cylindratae, 3-10 µm longae; cellulae apicales globosae, lobatae, 6-10 x 8-10 µm. Thyriothecia dispersa, saepe 1-2 connata, orbicularis, ad 108 µm diam.; margine crenatae vel fimbriatae, stellatim dehiscentes ad center; asci numerosi, globosi, octospori, 31-38 µm diam.; ascospores conglobatae, brunneae, 1-septatae, fortiter constrictus ad septatae, 14-19 x 10-12 µm, parietus glabrus.

Colonies hypophyllus, subdense, up to 3 mm in diameter, mostly confluent. Hyphae flexuous, branching opposite to alternate at acute angles, loosely to closely reticulate, cells 17-22 x 3-4 µm. Appressoria numerous, alternate, 2-celled, antrorse to subantrorse, 12-16 µm long; stalk cells cylindrical, 3-10 µm long; head cells ovate, globose, lobate, 6-10 x 8-10 µm. Thyriothecia scattered, often 1-2 connate, orbicular, up to 108 µm in diameter; margin crenate to fimbriate, dehiscence stellately at the center; asci many, globose, octosporous, 31-38 µm in diameter; ascospores conglobate, brown, 1-septate, deeply constricted at the septum, 14-19 x 10-12 µm, wall smooth.

Materials examined: On leaves of *Tylophora dalzellii* (Burm.f.) Merr. (Asclepiadaceae), Mahabaleswar, Maharashtra, Jan. 1, 2009, V.B. Hosagoudar and al TBGT 3689 (type).

There are eight species of the genus *Asterina* known on the members of the family Asclepiadaceae, namely *Asterina asclepiadis* Hosag. and Goos (Hosagoudar and Goos, 1996), *A. concinna* Sydow (Sydow, 1930), *A. cynanchi* Hosag. and Shiburaj (Hosagoudar, 2002), *A. heterostemmae* Yamam. (Yamamoto, 1956), *A. leonensis* Sydow (Sydow, 1938), *A. peraffinis* Speg. (Theissen, 1913), *A. toxocarpi* Hosag. and C.K. Biju (Hosagoudar, 2005), *A. travencorensis* Sydow and Sydow (Sydow and Sydow, 1915) and *A. tylophorae-indicae* Hosag. *et al.* (Hosagoudar *et al.* 2006). All these species having two celled appressoria except *Asterina tylophorae-indicae*. However, the present species differs from it in having typically lobate appressoria.

Meliola mahamulkarii V.B. Hosagoudar, P.J. Robin and G.R. Archana, sp. nov. (Fig. 2)

Etymology: Named in honour of Dr. S.H. Mahamulkar for his contributions to Meliolales

Coloniae amphigenae, plerumque epiphyllae, densae, ad 2 mm diam. Hyphae rectae vel subrectae, opposite acuteque ramosae, dense reticulatae, cellulae 24-31 x 5-7

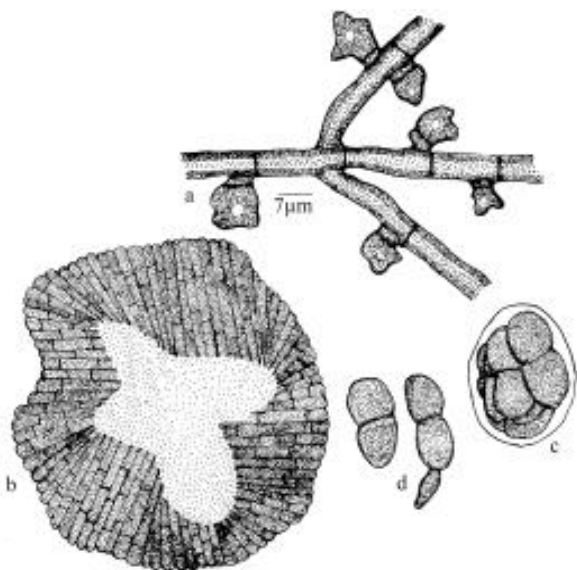


Fig. 1. *Asterina prataprajii* sp. nov. a. Appressariate mycelium, b. Thyriothecium, c. Ascus, d. Ascospores.

μm . Appressoria opposita vel alternata, antrorsa, 12-17 μm longa; cellulae basillares cylindraceae vel cuneatae, 2-5 μm longae; cellulae apicales ovatae vel globosae, integrae, 7-12 x 5-7 μm . Phialides appressoriis mixtus, alternatae vel oppositae, ampulliformes, 14-19 x 7-10 μm . Setae myceliales dispersae, rectae, simplices, obtusae ad apicem, ad 440 μm longae. Perithecia dispersa, ad 178 μm diam.; ascosporae obovoideae, 4-septatae, constrictus ad septatae, 43-50 x 17-19 μm .

Colonies amphigenous, mostly epiphyllous, dense, up to 2 mm in diameter. Hyphae straight to substraight, branching opposite at acute angles, closely reticulate, cells 24-31 x 5-7 μm . Appressoria opposite to alternate, antrorse, 12-17 μm long; stalk cells cylindrical to cuneate, 2-5 μm long; head cells ovate to globose, entire, 7-12 x 5-7 μm . Phialides mixed with appressoria, alternate to opposite, ampulliform, 14-19 x 7-10 μm . Mycelial setae scattered, straight, simple, obtuse at the tip, up to 440 μm long. Perithecia scattered, up to 178 μm in diam.; ascospores obovoidal, 4-septate, constricted at the septa, 43-50 x 17-19 μm .

Materials examined: On leaves of *Osyris arborea* Wall. (Santalaceae), on the way to Mahabeleswar, Maharashtra, Jan. 01, 2009, V.B. Hosagoudar and al TBGT 3688 (type). *Meliola osyridicola* Hansf. and *M. osyridicola* Hansf. var. *indica* Hosag. are known on the host genus *Osyris* from the Western Ghats of peninsular India (Hansford, 1961; Hosagoudar, 1996, 2008). However, *Meliola mahamulkarii* differs from both having 75% opposite appressoria.

ACKNOWLEDGEMENTS

We are grateful to Dr. A. Subramoniam, Director, TBGRI,

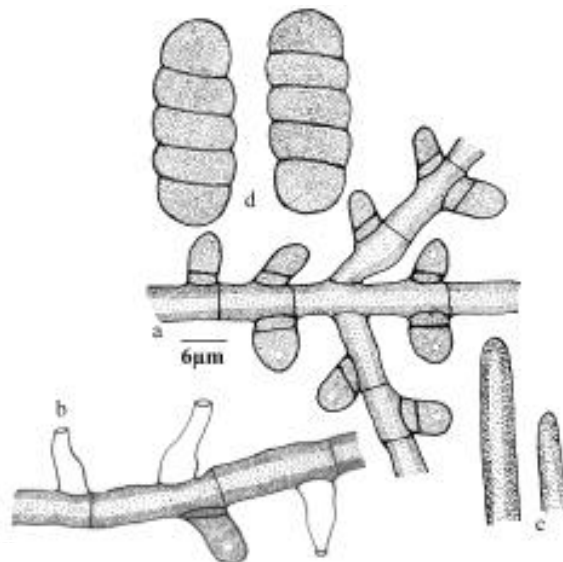


Fig. 2. *Meliola mahamulkarii* sp. nov. a. Appressariate mycelium, b. phialide, c. Apical portion of the mycelial setae, d. Ascospores.

Palode for the facilities to the Dept. of Environment and Forests, New Delhi for the financial assistance. It is our privilege to acknowledge Profs. V.S. Khandekar, S.H. Mamulkar, D.A. Kadam, A.B. Pawar, D.N. Jadhav, B.A. Kore, Y.C. Institute, Satara for their help and inequitable hospitality during our collection trip. Mr. Girish Badave, is greatly acknowledged for his help in the identification of host plants.

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