Plant Pathology & Quarantine 5(2): 49–51 (2015) ISSN 2229-2217
www.ppqjournal.org **Article** PPQ

Online Edition
Doi 10.5943/ppq/5/2/3

Mycoenterolobium flabelliforme: a new anamorphic fungus from India

Karandikar KG[1], Singh PN[2] and Singh SK[2*]

[1] Department of Botany, K.M.C. College, Khopoli, District Raigad - 410 203, Maharashtra, India.
[2] National Fungal Culture Collection of India, Biodiversity and Palaeobiology Group, MACS' Agharkar Research Institute, G.G. Agarkar Road, Pune – 411004, Maharashtra, India

Karandikar KG, Singh PN, Singh SK 2015 – *Mycoenterolobium flabelliforme*: a new anamorphic fungus from India. Plant Pathology & Quarantine 5(2), 49–51, Doi 10.5943/ppq/5/2/3

Abstract

Mycoenterolobium flabelliforme sp. nov. is described and illustrated from dead bark of *Tectona grandis* collected from Toranmal region of Maharashtra State, India. The fungus is distinct in having dark brown triangular and flat conidia made up of rows of cells, radiating in a linear pattern from the point of attachment and giving rise to more or less fan-shape structure on maturity. The proposed taxon is compared with morphologically similar taxa in the genus.

Key words – biodiversity – conidial hyphomycete – Maharashtra – new species – taxonomy

Introduction

Goos (1970) established *Mycoenterolobium* with *M. platysporum* as the type species, growing on decaying wood of *Araucaria* from Hawaii. Later, Chamuris et al. (1985) reported the same species from North America. The genus remained monotypic until Mercado & Mena (1986) described *M. platysporum* var. *magnum* from Cuba. The proposed new species was collected from Toranmal, North-West Maharashtra State, India during exploration and documentation of fungi of Maharashtra. Our recent approach to revisit taxonomy of uncommon taxa of fungi deposited in Ajrekar Mycological Herbarium (AMH, Holmgren et al. 1990), revealed the present taxon, which turned out to be undescribed. Based on its distinctive morphotaxonomic features, blastic conidiogenesis and formation of flat conidia made up of cells arranged in rows radiating in a linear pattern from the point of attachment, this taxon is accommodated in the genus *Mycoenterolobium*.

Materials & Methods

Bark samples along with litter of *Tectona grandis* L. were collected in paper bags from Toranmal and brought to the laboratory. A stereo microscope (Nikon-SMZ-1500 with Digi-CAM) was used to locate fungal colonies on the bark and to study its natural pattern on the host. Semi-permanent microscopic slides were prepared by making scrape mounts in lactophenol-cotton blue from bark sample. Morphotaxonomical details were observed and photomicrographs were taken with an Olympus CX-41 light microscope. Measurements of fungal structures were made with an ocular micrometer. The type specimen was deposited in Ajrekar Mycological Herbarium (AMH), MACS' Agharkar Research Institute, Pune, India.

Submitted 21 August 2015, Accepted 18 September 2015, Published online 13 November 2015
Corresponding Author: S.K. Singh – e-mail – sksingh@aripune.org

Results

In vitro culture

Attempts to culture *Mycoenterolobium flabelliforme* from its host on various agar media like v-8 juice agar, potato dextrose agar, potato carrot agar, malt extract agar (Tuite 1969) were unsuccessful.

Mycoenterolobium flabelliforme K.G. Karandikar, P.N. Singh & S.K. Singh **sp. nov.** Figs. 1–5

MycoBank: 804784; FacesofFungi number: FoF 01312

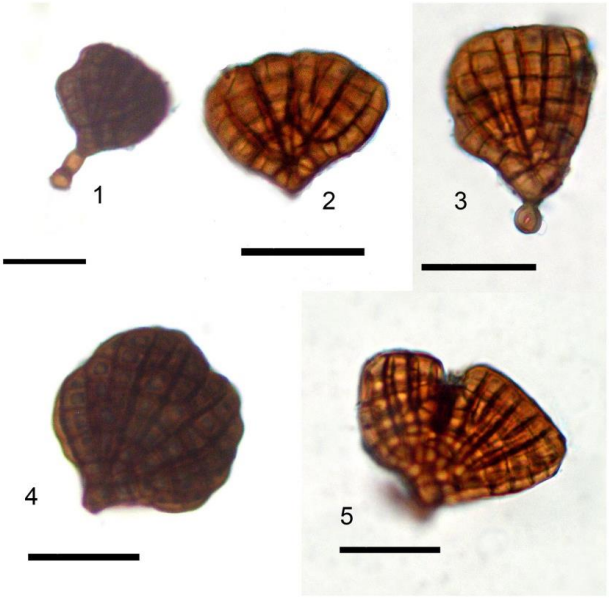
Etymology – *flabelliforme*, referring to fan shaped conidia.

Colonies black, shiny, uniformly spread, mycelium immersed. Conidiophores short, unbranched, brown, smooth, non-septate, occasionally one septate, 3.0–9.5 × 3.5–4 µm. Conidiogenous cells integrated, terminal, monoblastic, determinate, oval to beaded in outline. Conidia acrogenous, solitary, dark brown, flat, triangular becoming more or less fan shaped on maturity, made up of rows of cells radiating from the point of attachment, the number of rows varying from 7 to 15. Sometimes marginal row of conidial cells becomes in-folded near base, mature conidium rarely shows notch in the middle, smooth-walled, 23.5–37.5(–34.5) µm high × 24.5–45.5(–35) µm wide.

Teleomorph – Not known.

Known distribution – Known from type locality.

Material examined – India, Maharashtra, Toranmal, on bark of *Tectona grandis* L., 16 Dec. 1983, K.G. Karandikar (AMH 6636, holotype).



Figs 1–**5** – *Mycoenterolobium flabelliforme* (AMH 6636 holotype). 1, Conidiophore with terminal conidium. 2, 4 Fan shaped and triangular conidia with radiating rows of cells from point of attachment. 3, Triangular conidium with beaded/swollen conidiogenous cell attached to its base. 5, Mature fan shaped conidium with vertical groove. Bars = 20 µm.

Discussion

The genus *Mycoenterolobium* was established with *M. platysporum* as the type species (Goos 1970). In the proposed new species conidia are flat and made up of rows of cells, radiating in a linear pattern from the point of attachment as in type species. However, *M. flabelliforme* shows unique features like dark brown triangular conidia giving rise to more or less fan-shape structure on

maturity. In *M. platysporum* the conidia are black, shiny, flat, one celled thick and semicircular to irregular in outline. In *M. flabelliforme* the conidia are smaller in size, i.e., 23.5–37.5 µm × 24.5–45.5 µm (av. 34.5 × 31, n = 25) as against those of *M. platysporum* and *M. platysporum* var. *magnum*, which are much larger in size, 110–130 × 75–80 µm and 85–153 × 95–246 µm, respectively. In addition, the proposed species is distinct in having conspicuous and larger conidiophores, i.e., 3.0–9.5 × 3.5–4 µm as against inconspicuous or absent in *M. platysporum*. Therefore, considering these variations in overall morphotaxonomic features, the present taxon is proposed as a new species, *M. flabelliforme*.

Acknowledgements

We thank Director, MACS' Agharkar Research Institute, Pune, India for providing laboratory facility. K.G. Karandikar expresses deep gratitude towards late Dr. P.G. Patwardhan for his incredible guidance, and to Principal, K.M.C. College Khopoli, for support.

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