



Diversity of *Flabellospora* Ingoldian Hyphomycetes from Dang Forest of Gujrat

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ABSTRACT:

Flabellospora is Ingoldian hyphomycetous genus represented by number of taxa all over the world. The present study deals with five species viz. *Flabellospora acuminata* Descals, *Flabellospora amphibian* (Price & Talbot) Descals, *Flabellospora crassa* Alasoadura, *Flabellospora multiradiata* Nawawi and *Flabellospora verticillata* Alasoadura. All the species were found in foam samples during rainy season. *Flabellospora amphibian* (Price & Talbot) Descals found rarely.

Key Words: *Flabellospora*, Ingoldian hyphomycetes, Dang.

Introduction:

The aquatic Hyphomycetes were first recognized by late Prof. C. T. Ingold (1942) and are also referred to as the Ingoldian Hyphomycetes in his honour. They form a polyphyletic group with representative in the Ascomycetes and the basidiomycetes. The aquatic fungi are also called as freshwater Hyphomycetes (Nilsson, 1964), water borne Hyphomycetes (Webster and Descals, 1981) or amphibious Hyphomycetes (Akridge and Kochn, 1987). They produce conidia that are mostly unpigmented and branched or long and narrow. These conidial types are adapted for life in running water (Ingold, 1975).

The genus *Flabellospora* was established by Alasoadura (1968) to accommodate a single species, *Flabellospora crassa* Alasoadura. The genus is characterized by having, **Mycelium:** extensive, hyphae branched, septate, hyaline; **Conidiophores:** simple, rarely branched, hyaline; **Conidia:** aleuriospores, tetra- or multi-radiate, terminal, multicellular, eccentric, the terminal thallicoconidium has a stalk ending in a small spherical "head" from which a number of long straight arms diverge; arms placed more or less equidistantly from each other round the circumference of the "head", arms develop outwards and slightly upwards as lateral branches.

The water born hyphomycetes with tri, tetra and multiradiate hyaline conidia are called "Ingoldian Hyphomycetes" (Barlocher, 1992).

Flabellospora acuminata Descals (Plate - 1, Fig. 1)

Trans. Br. Mycol. Soc., **78**: 411 (1982).

Conidia: acrogenous, solitary, staurosporous, main body clavate, apex capitate, 4 - 6 µm diameter, base pedunculate, 5 - 10 µm long, branches (4) - 5 - (7), budding out before release, synchronous, (30) - 75 - 120 x 7 - 12 (-15) µm, one branch apical, the rest radiating slightly retrorsely, straight, fusiform (-obclavate), apex greatly extended, cells 3 - 10, released as a strangulation at the base, dispersed singly or as interlocked pairs.

Habitat: Saprobic on submerged decaying leaves in freshwater and conidia found in foam samples.

Description: Based Descals and Webster (1982).

Flabellospora amphibian (Price & Talbot) Descals (Plate - 1, Fig. 2)

Trans. Br. Mycol. Soc., **78**: 414. (1982).

Basionym: *Tetracrium amphibium* Price & Talbot, *Austral J. Bot.*, **14**: 20 - 21 (1966).

Conidia: solitary, apical, staurosporous, septa often indistinct, main body sinuous, delicate, obconical, apex capitate to obconical, 5 - 7.5 µm diameter, base pedunculate, 6 - 14 µm long, cells 1 - 2, branches (4) - 5 - (6) budding out before release, synchronous, one branch apical, the rest radiating antrorsely, straight or slightly curved, irregularly fusiform, 70 - 100 x 6 - 8 µm, multicellular, colourless, vacuolated, released at a geniculation, aggregating in a gloccoid mass.

Habitat: Saprobic on decorticated wood in terrestrial habitats and conidia found in foam samples.

Description: Based Descals and Webster (1982).

Flabellospora crassa Alasoadura (Plate - 1 Fig. 3)

Nova Hedwigia, **15**: 416 (1968).

Conidia: each arm is 37 - 56 μm long, 3.5 - 4.0 μm wide at the attachment constriction, increases in diameter to 5.5 - 7.5 μm at the widest part (which is 12 - 20 μm from the point of attachment) and again narrows gradually towards the tip which is about 3 μm wide. Four or more septa develop in each arm just before the conidium attains maturity.

Habitat: Saprobic on submerged decaying leaves in freshwater.

Description: Based on the present study and Alasoadura (1968).

Flabellospora multiradiata Nawawi (Plate - 1 Fig.4)

Trans. Br. Mycol. Soc., **66**: 543 (1976).

Conidia: holoblastic, hyaline, multi - radiate, main axis 9 - 13 μm long x 2 - 3 μm at the base, expanding above to form a globose structure 4 - 6.5 μm diam., from around this, which is usually demarcated from the narrow stalk by a septum, 12 - 27 (usually 18 - 19) long, slender, fusiform arms arise, each arm is markedly constricted at its point of origin and thereafter broadens to 1.5 - 2 μm at the widest point and finally tapers to 1.5 - 2 μm at the apex which is acute to acuminate and lacks septation in the parts 12 - 20 μm from the tip, the arms are 90 - 140 μm long, 10 - 18 septate and slightly constricted at the septa especially along the basal half, at maturity the cells become vacuolated and impart a pearly appearance to the whole conidium, conidia in foam samples usually have a blob of mucilaginous material at the tip of each arm.

Habitat: Saprobic on decaying submerged leaves and conidia found in foam samples from freshwater habitats.

Description: Based on Nawawi (1976).

Flabellospora verticillata Alasoadura (Plate - 1 Fig. 5)

Nova Hedwigia, **15**: 419 (1968).

Conidia: The detached conidium consists of a main axis 15 - 33 μm long 2 - 3 μm wide with a terminal spherical or subspherical portion 2 - 3.5 μm across, 4 - 10 arms (usually 5 - 7), each arm 50 - 90 μm long, 8 - 14 septate, about 1.5 μm at the attachment constriction, 4.0 - 5.5 μm at the widest part and tapering to about 2 μm at the tip.

Habitat: Saprobic on submerged decaying leaves in freshwater and conidia found in foam samples.

Description: Based on Alasoadura (1968).

Conclusion: *Flabellospora acuminata* Descals, *Flabellospora amphibian* (Price & Talbot) Descals, *Flabellospora crassa* Alasoadura, found rarely and *Flabellospora multiradiata* Nawawi, *Flabellospora verticillata* Alasoadura found abundantly.

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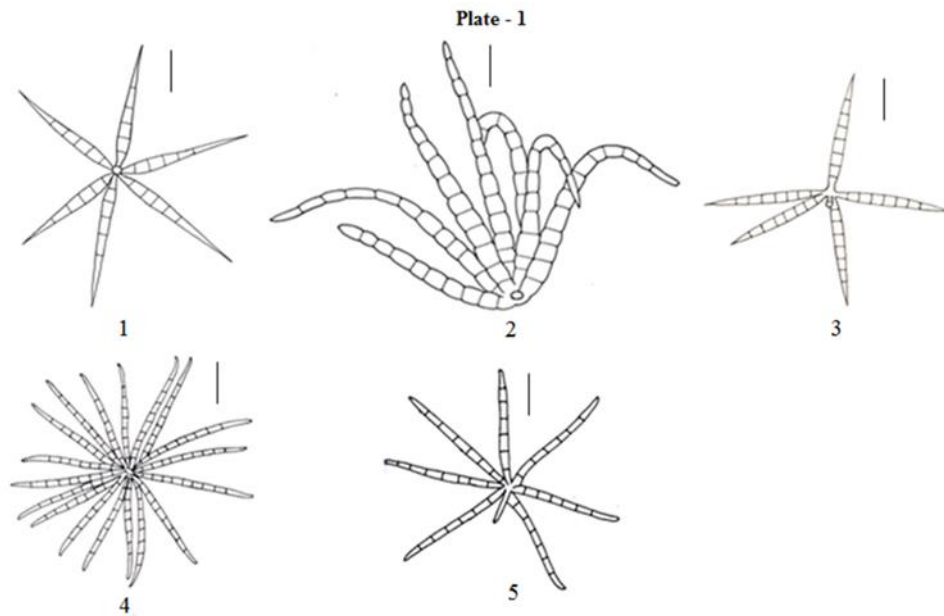
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Figures:

- 1) *Flabellospora acuminata* Descals 2) *Flabellospora amphibian* (Price & Talbot) Descals
 3) *Flabellospora crassa* Alasoadura 4) *Flabellospora multiradiata* Nawawi
 5) *Flabellospora verticillata* Alasoadura

Scale bar: 1 cm = 30 μ m