



FRESHWATER HYPHOMYCETES FROM DADRA, NAGAR HAVELI, UNION TERRITORY OF INDIA

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ABSTRACT:

The present paper deals with five species of freshwater borne hyphomycetes encountered in foam samples collected from Sakaltond River and Vaghchauda boating point, Dadra, Nagar Haveli. These are *Helicomyces torquatus* Lane & Shearer, *Helicomyces roseus* Link, *Beltrania rhombica* Penzig., *Isthmotricladia laeensis* Matushima, *Triscelophorus acuminatus* Nawawi.

Keywords: Freshwater Hyphomycetes, Foam Samples, Dadra, Nagar Haveli.

INTRODUCTION:

The innovative work on freshwater hyphomycetes was started from the work on C.T. Ingold (1942). He termed them as "Aquatic Hyphomycetes" because they complete their life cycle including vegetative growth, reproduction, conidia formation, release and dispersal on submerged substrates in well aerated freshwater. Later on these fungi have described as "Freshwater Hyphomycetes" (Nilsson, 1964). From all over the world there are 500 species of Hyphomycetes are known. Most of the species are reported from temperate regions. The Union Territory Of India, Dadra, Nagar Haveli is rich in biodiversity. However scanty work has been done on freshwater hyphomycetes in Dadra, Nagar Haveli. Therefore present exploration was carried out.

MATERIALS & METHODS:

The foam samples were collected from the different localities of Madhuban dam, and Sakaltond river of Dadra, Nagar Haveli from both the lentic and the lotic habitats.

Foam Analysis: The foam is formed by the movement of the water against natural obstacles like stones, twigs and logs, especially in lotic systems, constitutes a natural trap for the conidia of aquatic hyphomycetes. Foam samples were collected at morning and evening time. Samples were made with a scoop and placed in clean wide mouthed plastic bottles and kept for 24 hours to enable the foam to dissolve. Then the foam was preserved by adding FAA. Then the foam samples were returned to the laboratory and observed under research microscope for the presence of conidia of hyphomycetes.

The preparation of permanent slides were done as suggested by Volkmann Kohlmeyer and Kohlmeyer (1996). The measurements and

microphotographs of freshwater hyphomycetes were taken.

RESULT & DISCUSSION:

1. *Helicomyces torquatus* Lane & Shearer
Mycotaxon. 19:291- 294 (1984)

Conidia: Hyaline, dry, solitary, attached eccentrically and seceding schizolytically, 50-130 µm. in diameter. **Conidial filament:** 4.5-7.1 µm. In diameter, multiseptate, coiled 1 ½ - 3 times, the basal cell bearing a flattened attachment scar.

Habitat: Conidia in foam samples, Vaghchauda boating point, 24 Sept.2017. **Leg.** A.B.Sapkale.

Distribution in India: Karnataka: Conidia in foam samples (Ramesh, 2002); **Gujarat:** Conidia in foam samples (Borse and Patil, 2015).

2. *Helicomyces roseus* Link

Ges. Naturf. Freunde Berlin Mag. Neuestern Entdeck. Gesamten Naturk., 3: 21(1809).

- *Helicomyces albus* Preuss, 1852 (fide Linder, 1929).

- *Helicomyces elegans* Morgan, 1892 (fide Linder, 1929)

- *Helicomyces clarus*, Morgan, 1892 (fide Linder, 1929)

- *Helicomyces fuscescens* Linder, *Ann. Missouri Bot. Gard.*, 18: 15-16 (1931)

Conidia: hyaline, frequently with hyaline secondary conidia, 25- 60 µm in diam.

Conidial filament: 4-5 µm in diam, multiseptate, tapering to an enlarged, obliquely flattened basal cell, coiled 2 ¼ - 3 times.

Habitat: Conidia in foam samples, Vaghchauda boating point, 24 Sept. 2017. **Leg.** A.B.Sapkale.

Distribution in India: Karnataka: On submerged leaves and in foam samples (Rajashekhar and Kaveriappa, 2003) Uttarakhnad: Conidia in water samples (Arya

and Sati, 2012); **Gujarat:** Conidia in foam samples (Borse and Patil, 2015).

3. *Beltrania rhombica* Penzig.

Conidia: Biconic symmetrical, pale brown with one(pseudo-) septum, smooth, $25\mu\text{m} \times 9\mu\text{m}$ with a hyaline, slender, pointed apical rostrum, 6-7 μm long and 1-2 μm wide.

Habitat: Conidia in foam sample, Sakaltond river, 24 Sept.2017. **Leg.** A.B. Sapkale.

Distribution in India: Western Ghats: Subramanian and Bhat (1981), Karnataka: Sridhar and Kaveriappa (1989), Maharashtra: Borse B.D. and Patil R.S. (2007).

4. *Isthmotricladia laeensis* Matushima

Bull. Nat. Sci. Mus. Tokyo, 14:479 (1971)

Conidia: Scopiform, hyaline with a narrow – clavate stalk. Stalk 15-20 μm in length, branches 3, with obconic bases, 35-53 μm long. Basal branching of the arm initial is arising from the stalk cell.

Habitat: Conidia in foam samples, Sakaltond river, 24 Sept.2017. **Leg.** A.B.Sapkale.

Distribution in India: Karnataka: (Sridhar and Kaveriappa, 1982), Maharashtra : (Borse and Patil, 2007)

5. *Triscelophorus acuminatus* Nawawi

Trans. Br. Mycol.soc.64: 346(1975).

Conidia: Tetra-radiate, hyaline, each consist of main axis tapering gradually to about 0.5 μm at the apex, up to 8. Septate, not constricted at the septa. Main axis 44-65 μm long and 3.5-5 μm at the widest point. The arms are connected to the basal cell by a very narrow, thread like isthmus. The arms are slightly shorter than the main axis, 20-58 \times 3-4.5 μm .

Habitat: Conidia in foam sample , Sakaltond river, 24 Sept. 2017. **Leg.** A. B. Sapkale

Distribution in India: **Uttarakhand:** conidia in foam samples (Mer and Sati, 1989); **Karnataka:** on submerged leaves, conidia in foam and water samples (Sridhar and Kaveriappa, 1982); **Kerala:** On submerged leaves, conidia in foam and water samples (Sridhar and Kaveriappa, 1985); **Maharashtra:** Conidia in foam samples (Borse and Patil, 2006); **Madhya Pradesh:** On submerged leaves, twigs and conidia in foam samples (Agarwal et al., 1992).



Fig.1. *Helicomyces torquatus* Lane & Shearer,

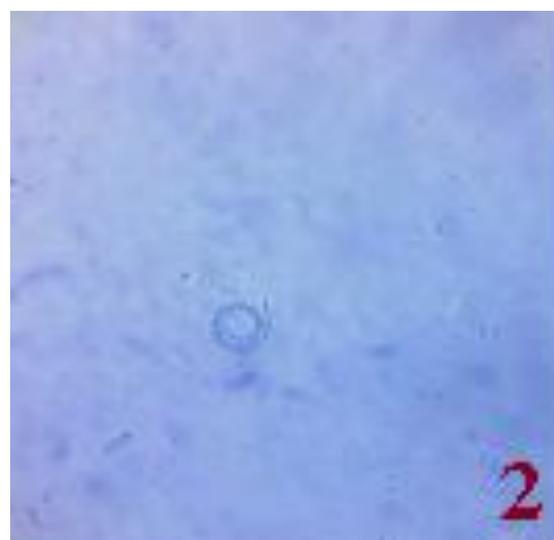


Fig.2 *Helicomyces roseus* Link,



Fig.3 *Beltrania rhombica* Penzig.,



Fig.4 *Isthmotricladia laeensis* Matushima,

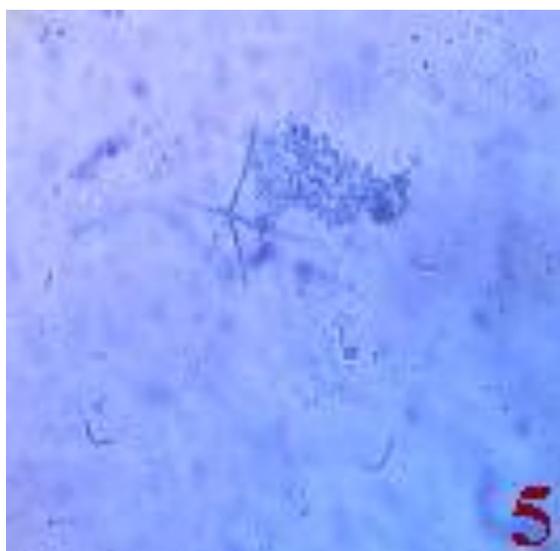


Fig.5 *Triscelophorus acuminatus* Nawawi

CONCLUSION:

Five species of freshwater hyphomycetes encountered in foam samples collected from U.T. of India, Dadra, Nagar Haveli viz. *Helicomyces torquatus* Lane & Shearer, *Helicomyces roseus* Link, *Beltrania rhombica* Penzig., *Isthmotricladia laeensis* Matushima, *Triscelophorus acuminatus* Nawawi are being reported for the first time from Dadra, Nagar Haveli. The data collected provide information on the biodiversity and Geographical distribution of these fungi from freshwater habitats of India.

ACKNOWLEDGEMENT:

The authors are thankful to Principal Dr. M. V. Patil and Mrs. Dr. Sandhya S. Patil (Head P.G. Dept. Of Botany), S.S.V.P. Sanstha's L. K.

Dr. Ghogrey Science college, Dhule, Maharashtra for providing laboratory facilities.

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