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Diversity of Fresh Water Hyphomycetes from Buldhana District (M.S.), India

L. C. Nemade[1], V. R. Patil[I], M.S. Patil[I] and S.A. Chaudhari[2]
[1]Shri V. S. Naik Arts, Commerce & Science College, Raver District- Jalgaon. 425508 (M.S.), India
[2]D. A.G.D. Bendale Mahila Mahavidyalaya, Jalgoan (M.S.), India

**Corresponding author, Email:*

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Abstract

The present study deals with five species of freshwater hyphomycetes collected in foam samples from Purna river of Bhuldhana District. All the five species are being reported for the first time form Bhuldhana District.

1. Introduction

The occurrence of water-borne fungi has been reported from various parts of Europe, Africa. America, Asia and Australia (Ingold,1975; Subramanian,1971).To India, the aquatic hyphomycetes were studied by Ingold and Webster (1973),Subramanian and Bhat (1981), Sridhar *et al.* (1992), Galiah and Manoharachary (1987), Agrawal *et al.* (1991), Sati and Tiwari (1997), Sati *et al.*(2002).In Maharashtra , these fungi were recorded by Thakur (1977), Patil and Kapadnis (1980), Patil (1998), Borse and Patil (2006), Borse and Patil (2007). The present study reports five species of freshwater hyphomycetes from Bhuldhana District over a period of one year (2008-2009).

2. Materials and Methods

Samples of foam were collected from the river Purna of Bhuldhana District.

Foam analysis

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

The permanent slides were prepared as suggested by Kohlmeyer & Kohlmeyer (1996). Identification of the freshwater hyphomycetes were confirmed with the help of Nilsson (1964), Ingold (1975), Marvonova (1997), and Cai *et al.* (2003) and other relevant literature. Reports of fungi from India and Maharashtra were confirmed with the help of Kamat *et al.* (1971), Bhide *et al.*(1987), Mahabale (1987), Bilgrami *et al.* (1979, 1981, 1991), Sridhar *et al.* (1992), Sarbhoy *et al.* (1986, 1996), Jamaluddin *et al.* (2004) and other relevant literature.

Taxonomic account

Anguillospora crassa Ingold (Plate 1,Fig. 1,)

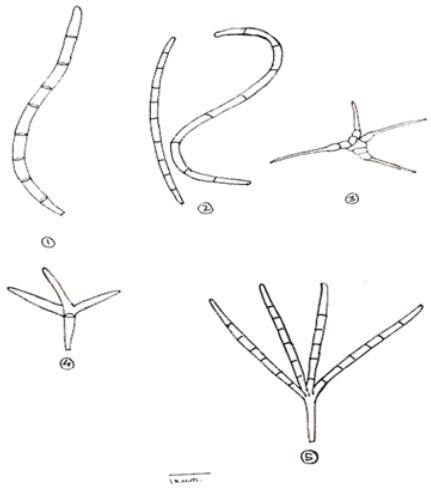
Conidia: hyaline, S or L shaped, 120- 200 µm long and 15- 20 µm wide in the middle region, tapering to 8- 10 : hyaline,branched,the main body globose or ovoid at the ends.

Habitat: Conidia in foam samples,Purna river.

Distribution in India: Maharashtra (Thakur, 1977), Karnataka (Sridhar and Kaveriappa, 1986, 1992), Kumaun Himalaya (Sati and Tiwari, 1990).

Remark: The measurements and descriptions of conidia are completely agree with that of *Anguillospora crassa*. Therefore, it is assigned to thatspecies.

Plate 1. Fig. 1..*Anguillospora crassa* Ingold , Fig.2. *Anguillospora longissima* (Sacc. And Sydow) Ingold, Fig.3.*Campylospora chaetocladia* Ranzoni, Fig.4. *Alatospora acuminata* Ingold, Fig.5.*Isthmotricladia gombakiensis* Nawawi.



Anguillospora longissima **(**Sacc. And Sydow) Ingold (Plate 1,Fig. 2,)

Conidia: unbranched, elongated, 8- 12 septate, sigmoid with curvature in more than one plane, 200- 280 X 2.5- 3.5 µm.

Habitat: Conidia in foam samples, Purna river.

Distribution in India: Maharashtra (Thakur, 1977, Talde ,1983), Western Ghat (Subramanian and Bhat, 1981), Kerala (Sridhar and Kaveriappa, 1985), Karnataka (Sridhar and Kaveriappa, 1982, 1988; Ramesh and Vijaykumar 2000;Western Ghat, Rajashekhar and Kaveriappa,2003).

Remark: The measurements and descriptions of conidia are completely agree with that of *Anguillospora longissima* (Sacc. And Sydow). Therefore, it is assigned to that species.

Campylospora chaetocladia Ranzoni (Plate 1,Fig.3)

\Conidia: composed of two parts, proximal half triangular, 3-4 septate, 8- 12.5 µm high, 10- 12 µm wide at the base, distal half allantoids, 3- 4 celled, 9- 13 µm long, 3.5- 5 µm wide. Appendages arising from end cells, setae like, 30- 40 µm long.

\Habitat: Conidia in foam samples, Purna river.

\Distribution in India: Karnataka (Sridhar and Kaveriappa, 1982, 1986,1988,1989 , 1992), Kerala (Sridhar and Kaveriappa, 1985), Andhra Pradesh (Gaillah and Manoharachary, 1987), Maharashtra (Borse and Patil, 2006).

\Remark: It has been reported for the first time from Purna river.

Alatospora acuminata Ingold (Plate 1, Fig.4)

Conidia: typically tetraradiate, axis long-fusoid, arcute or bent at branch insertion or nearly straight, 30-70 X 1.0-2.5 µm. With up to six septa; branches 12-35 X 1.0-2.2µm, base decurrent to narrow, inserted near the middle or in the lower half of the axis; with up to four septa.

Habitat: Conidia in foam sample, Purna river.

Distribution In India: Kerala (Sridhar and Kaveriappa, 1985); Karnataka (Sridhar and Kaveriappa, 1982, 1986, 1989); Kumaun Himalaya (Sati and Tiwari, 1990); Maharashtra (Patil, 1998).

Remark: It has being reported for the first time from Buldhana District**.**

Isthmotricladia gombakiensis Nawawi (Plate 1, Fig.5)

Conidia: hyaline, main axis 20- 27 X 2- 3 µm, 1-3 septate, mature conidia consisting of four to six arms, the arms are fusiform, 74- 102 µm long, 4- 5.5 µm wide, 9- 15 septate, tapering to 1- 1.5 µm at the apex by very narrow isthmus, 2- 4.5 µm long, 1- 1.5 µm wide.

Habitat: Conidia in foam samples, Purna river.

Distribution in India: Karnataka (Sridhar and Kaveriappa, 1984, 1982; Ramesh and Vijaykumar, 2000), Andhra Pradesh (Sarma and Manoharachary, 1989), Western Ghats, (Rajashekhar and Kaveriapp, 2003), Maharashtra (Borse and Patil, 2006).

Remark: The measurements and descriptions of conidia are completely agree with that of *Isthmotricladia gombakiensis Nawawi* (1975).

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