

Aquatic Fungi from Buldhana District (M.S., India) – II: Genus *Campylospora* Ranzoni

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Abstract: The present paper deals with three species of the genus *Campylospora* Ranzoni viz., *Campylospora chaetocladia* Ranzoni, *Campylospora filicladia* Nawawi and *Campylospora leptosoma* Marvanova and Laichmanova encountered in foam samples from freshwater habitats. *Campylospora leptosoma* is being recorded for the first time from India. The remaining two species are being recorded for the first time from Buldhana district of Maharashtra state (India). The data provides information on the distribution of these fungi in India, apart from description and illustrations.

Keywords: *Campylospora*, Freshwater, foam samples, Mitosporic fungi

1. Introduction

The fungi from freshwater habitats include a spectacular array of Mitosporic fungi characterized by their magnificent spore types. They play a significant role in the decomposition of the organic matter. Hence, knowledge of the geographical distribution pattern of freshwater fungi is important since freshwater habitats are declining at an alarming rate due to human activities and climatic changes. Perturbation of freshwater habitats can lead to loss of species, which may further lead to alteration of ecological processes and ecosystem functions.

The present paper deals with three species of the genus *Campylospora* Ranzoni viz., *Campylospora chaetocladia* Ranzoni, *Campylospora filicladia* Nawawi and *Campylospora leptosoma* Marvanova and Laichmanova encountered in foam samples from freshwater habitats. *Campylospora leptosoma* is being recorded for the first time from India. The remaining two species are being recorded for the first time from Buldhana district of Maharashtra state (India). The data provides information on the distribution of these fungi in India, apart from description and illustrations.

2. Materials and Methods

Foam samples were collected at morning and evening time from study sites in Buldhana district of Maharashtra state. Samples were placed in cleaned wide mouthed plastic bottles and kept for 24 hours to enable the foam to dissolve. It was preserved by adding FAA to yield 5% foam solution. Then samples were brought to laboratory and scanned under low or high power of a microscope by using 15 x eye-piece for the presence of conidia of freshwater Mitosporic fungi. Identifications of isolated fungi were confirmed with the help of Ranzoni (1953), Nawawi (1974) and (Marvanova and Laichmanova, 2014). Reports of the fungi studied were confirmed with the help of Bilgrami et al. (1991), Sridhar et al. (1992), Jamaluddin et al. (2004) and relevant literature.

Systematic Account

Genus: *Campylospora* Ranzoni

Farlowia, 4: 373 (1953).

The genus *Campylospora* was established by Ranzoni (1953) with *Campylospora chaetocladia* as a type species. The genus *Campylospora* is characterized with colonies in isabelline tones, hyaline to pale brown hyphae including variously shaped inflated cells, integrated conidiogenous cells typically proliferating sympodially. Characteristic for all accepted species (4 sp.) is a strongly recurved conidial primordium during the early stage of development, resembling a "crozier" stage of ascogenous hyphae during the early fruit body differentiation (Ranzoni, 1953). The primordium starts as a clavate outgrowth on the conidiophore apex, soon elongating and becoming strongly recurved. A septum is laid down at the point of bending. Two new growth points appear at the proximal side of the septum, giving rise to the first conidial part; on the distal side of the septum the second conidial part is formed. At this stage cellular appendages start to grow simultaneously from the conidial end cells. Mature conidia are bipartite: the first-formed (proximal) part is more or less triangular in outline, consisting of two arms perpendicular to each other on a heel-like pedicel; the second-formed (distal) part is fusoid or allantoid, connected dorsally to the proximal part. Conidial secession is schizolytic. The genus is represented by four accepted and one undescribed species (Marvanova and Laichmanova, 2014).

Type Species: *Campylospora chaetocladia* Ranzoni

Habitat: On submerged decaying leaves.

Description: Based on Marvanova and Laichmanova (2014).

1) *Campylospora chaetocladia* Ranzoni

Farlowia, 4: 373 (1953).

Conidia: colourless, multicellular, each consisting of a basal cell 9-12 µm wide, 10-14 µm long, with two divergent appendages of approximately the same length, 35-50 µm long, 3-6 µm wide at the point of attachment to the basal cell and tapering to about 1.5 µm at the tips, and a lateral branch, 10-25 µm long, attached perpendicularly to the transverse axis of the conidium and bearing at each

end an appendage similar in appearance to those on the basal cell.

Habitat: Conidia in foam samples, Wan river (at Sangrampur), 15 Aug.2014

Distribution:- *Uttarakhand:* Conidia in foam (Mer and Sati, 1989); *Karnataka:* On submerged leaves, conidia in foam and water samples (Sridhar and Keveriappa, 1982a); *Kerala:* Conidia in foam (Sridhar and Keveriappa, 1985a); *Andhra Pradesh:* On submerged leaves (Manoharachary and Rao, 1983); *Maharashtra:* Conidia in foam samples (Borse and Patil, 2006); *Gujarat:* Conidia in foam samples (Ahire et al., 2009); *Madhya Pradesh:* On submerged leaves (Agarwal et al., 1992).

2) *Campylospora filicladia* Nawawi
Trans. Br. Mycol. Soc., **63**: 603 (1974).

Conidia: consists of two distinct halves: The proximal half is triangular, 4-celled, 6-7.5 µm high and 10-12 µm wide. The distal half is allantoid, 4-celled, 9-13 µm long and 3-4.5 µm wide. Viewed either from the top or bottom, the conidium is more or less rectangular, 4-4.5 µm thick with a round or conical projections at each corner. The appendages arising from the end cells are lie along the long axis. The projection opposite the origin of each appendage is bigger and rounder. The two appendages at the top of the conidium are usually longer (15-35 µm) than the lateral appendages (7-17 µm). They are always directed opposite each other and are more or less perpendicular to the lateral appendages. Surface view of the conidium always shows these two appendages to be in a crossed position.

Habitat: Conidia in foam samples, Wan river (at Sangrampur), 15 Aug.2014, leg. V.R. Patil

Distribution:- *Karnataka:* Conidia in foam (Subramanian and Bhat, 1980); *Kerala:* Conidia in foam (Subramanian and Bhat, 1980); *Tamil Nadu:* Conidia in foam (Subramanian and Bhat, 1980); *Maharashtra:* On submerged leaves and conidia in foam (Shinde and Pawar, 2008).

3) *Campylospora leptosoma* Marvanova & Laichmanova
Mycosphere, **5**: 250 (2014).

Conidia: septate, slightly constricted at septa; the triangular part is 3-4-septate, 6-10 x 11-23 µm, the heel-like pedicel is typically cylindrical, widened only just below the foot of the lateral arm, 1-1.5 x 2-5 µm; the allantoid part is 3 (4)-septate, 9-19 x 3-4.5 µm; conidial end cells are apically rounded or rarely conoid, the two juxtaposed distal ones often semi-dome shaped with adjacent sides flattened and parallel; each end cell bears a single appendage; appendages are parallel-walled or slightly tapering distally, 15-35 x 1-1.5 µm, typically distinctly constricted or rarely cylindrical at insertion, straight or gently curved, mostly terminal, but on the distal conidial ends sometimes subterminal, crossed or diverging, rarely parallel or abruptly recurved. Top or

bottom view of the conidial body is fusoid. Conidial hilum is flat or somewhat bulged, slightly thickened.

Habitat: Conidia in foam samples Purna river (at Jalgaon Jamod), 15 Aug.2014**Remarks:-** The descriptions and measurement of conidia are completely agreed with that of *Campylospora leptosoma* Marvanova and Laichmanova (2014). Therefore, it is assigned to that species. It is being reported for the first time from India.

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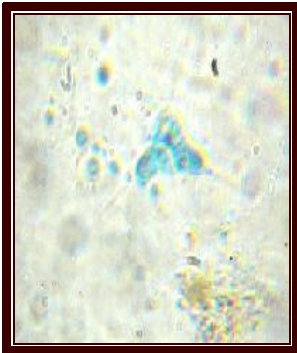
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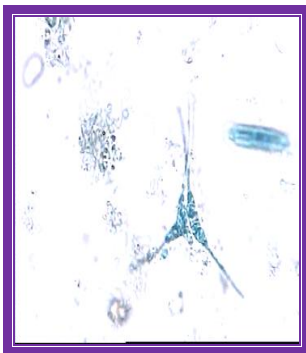
Photo Plate



1) *Campylospora chaetocladia* Ranzoni



2) *Campylospora filicladia* Nawawi



3) *Campylospora leptosoma* Marvanova & Laichmanova