

The Genus Bitrimonospora Spec.Nov.From Marathwada

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ABSTRACT

The Ascomycetous Fungi is the largest group. These fungi are highly diverse and versatile organisms adapted to all kinds of environment. Also they are heterogenous in nature and rich in their pattern.

However, it was observed that since during last few years Mycology, a branch of Botany has been neglected in Marathwada region and no studies have been done on this particular branch. Therefore, it was felt to undertake the work on taxonomic studies of ascomycetous fungi.

To investigate fungal flora and to study their taxonomic aspects, Ramling hill forest was selected. Ramling forest is located in Yedsi, Osmanabad district of Marathwada region which forms the part of Deccan plateau. Ramling Forest is a big forest with thorny shrubs mixed with dry deciduous forest type. Therefore, it was intended to undertake the work of investigating various fungi occurring saprophytically on the dead and decaying fallen leaves and twigs of the plants of Ramling forest, particularly to investigate some of the Ascomycetous fungi.

In the present collection, the author has investigated the Bitrimonospora tilakii spec. nov. on dead stem of Butea monosperma Lamk. which is new to science.

INTRODUCTION

Ascomycetes is the large group of fungi growing in diverse habitats. The Ascomycetous fungi, with richness of their pattern and highly heterogenous nature, have posed a difficult task to the taxonomists. The classification and taxonomy of



Ascomycetous fungi and the pattern of the treatment of different groups by different workers are widely divergent, depending upon their concept of origin of these fungi and evolutionary characters of various taxonomic criteria. Even in the modern classification original concept of Lindau (1897) of Plectomycetes, Pyrenomycetes and Discomycetes is taken into account, which forms the basis of classification.

His concept of perithecium with the presence of an apical ostiole, basal origin of asci, the presence of sterile threads or paraphyses, even now forms the basis of modern classification. Now, it is admitted fact is that a single character as taxonomic criteria always create more difficulties than solving the problems. Holm (1958) has proposed that, several features like ascus, its structure, manner of ascus opening, its wall, manner of arrangement and development besides the stroma, its nature, colour and consistency of the ascocarp, presence and absence of sterile threads or paraphyses, number of ascospores in each ascus, their colour, septation and arrangement etc. has taken into consideration.

The genus *Bitrimonospora* is characterized by pseudothecia solitary, innate, black, sub-globose to flask shaped, ostiolate with cylindrical neck. Asci numerous, 1-2-3 cylindrical, obovate to elliptical, bitunicate, pseudoparaphysate, Pseudoparaphyses hyaline, filiform. Ascospores globose, dark brown to hyaline with a thick outer wall.

MATERIALS AND METHODS



The work has been completed through following steps:

- 1. Collection of infected plant material**
- 2.Laboratory work.**
- 3.Identification of Fungi.**

1.The collection of infected plant material was done at every fortnight. The field observation was done carefully and the date of collection and identification of the host was carefully recorded. It may be mentioned that for the identification of the host, particularly for the vernacular names the help was taken from a common layman.

2.In the laboratory, the hand sections of these infected plant material were carefully taken. The slides were prepared by using Lactophenol as a mounting medium and cotton blue as a stain. Then the slides were sealed with nail paint and preserved in the laboratory.

3.The prepared slides were carefully observed under calibrated research microscope. The measurement of Ascocarp, Asci and Ascospores were carefully taken. The identification of different genera was done with the help a book “Genera of Fungi” by Clements and Shear(1973).



MATRIX STUDIED

Bitrimonospora tilakii spec.nov.

Collected on dead stem *Butea monosperma* Lamk. during the month of Nov.2004 at Ramling Forest, Yedsi. Leg. R.A. Kamble.

Pseudothecia innate to erumpent, grouped, black, flask shaped with a broadly rounded to flattened base and cylindrical neck measuring from 355-360 μ x 309-320 μ , including the neck. At the region where the neck protrudes the adjacent host tissue is blackened. Internally, the neck is lined with filiform hyaline paraphyses. The wall of pseudothecium is composed of thick, 2-3 layered, dark brown, polygonal to rounded cells. Inner wall composed of 2-3 layers, hyaline, elongated, thin walled cells. Asci shortly pedicellate, rounded, obovate to elliptical, 1-3 spored, commonly 1- spored, bitunicate, evanescent, hyaline, measuring 30-42 μ x 20-23 μ . Pseudoparaphysate, Pseudoparaphyses many, non-septate filiform and longer than asci. Ascospores rounded, aseptate, measuring 8 μ -9 μ , hyaline when young, at maturity becomes dark brown in colour, globose with a very thick outer wall

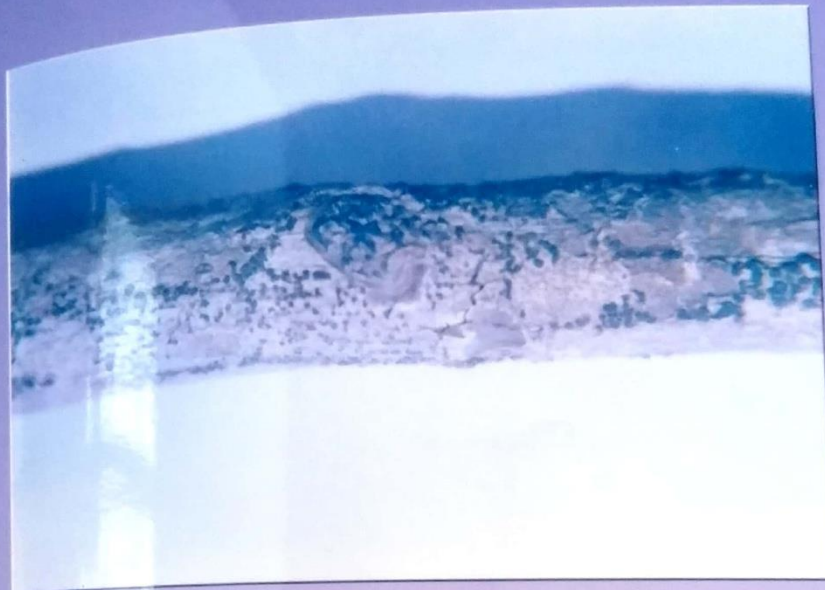


Comparative Table of Indian Species of Bitrimonospora .

Sr.No.	Species	Host	Psedothecia	Asci	Ascospores
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1.	<i>B.indica</i> Sivansen, Talde&Tilak Leg. U. K. Talde	Dried hypocotyl region of <i>Achyranthus aspera</i> Linn.	200 μ -540 μ x 400 μ -690 μ	64.6 μ -95 μ x 30 μ -45 μ	34.2 μ -42 μ
2.	<i>B. marathwadensis</i> spec. nov. Leg. Nagpurne V.S.	<i>Terminalia bellirica</i> Roxb.	1020-1166 μ x 200 μ -310 μ	17 μ -27 μ	6 μ -13 μ
3.	<i>B. mangifera</i> spec. nov. Leg. Nagpurne V.S.	<i>Mangifera indica</i> L.	167 μ -341 μ x 200 μ -410 μ	33-53 μ x 30 μ -40 μ	10 μ -17 μ
4.	<i>B. tilakii</i> spec. nov. Leg. Kamble R.A.	<i>Butea monosperma</i> Lamk.	355 μ -360 μ x 309 μ -320 μ	30 μ -42 μ x 20 μ -23 μ	8 μ -9 μ

Bitrimonospora tilakii spec.nov.

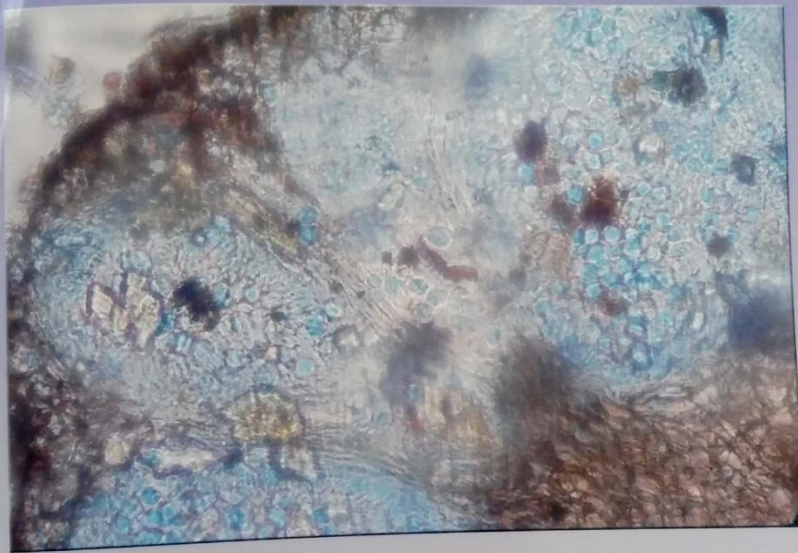


Dead stem of *Butea monosperma* Lamk.



v.s. of pseudothecia

***Bitrimonospora tilakii* spec.nov.**



Asci & Ascospores

CONCLUSION

The genus *Bitrimonospora indica* has been erected by Sivansan, Talde & Tilak as the new generic record from India with *B.indica* Sivansan et.al. as the type species. Later on, Nagpurne has investigated two more species from Maharashtra i.e. *B. marathwadensis* spec. nov. & *B. mangifera* spec. nov. The author has added one more species viz. *B. tilakii* spec. nov. from Marathwada region of Maharashtra.

On the basis of morphological characters the present collection differs from earlier species. Therefore, *B. tilakii* spec. nov. has been described as the new record to the science. With the addition of this species, total number of *Bitrimonospora* now becomes four.

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