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MORPHOTAXONOMY OF TWO RARE FUNGI FROM VIDHARBHA (MS) INDIA

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ABSTRACT

This communication addresses the morphotaxonomy of two rare fungi from distinct locations (Melghat and Navegaon) and varied hosts in Vidarbha. The fungi referenced in the aforementioned communication, namely *Amerosporium* and *Bacrodesmium*, were uncommon in this region and documented for the first time. Following comprehensive morphotaxonomical analyses, they were classified as new species, specifically *Amerosporium gawilgadium* sp.nov., *Bactrodesmium indicum* sp,nov.

KEYWORDS: This communication addresses the morphotaxonomy of two rare fungi from distinct locations (Melghat and Navegaon) and varied hosts in Vidarbha.

INTRODUCTION

Navegaon and Melghat are renowned locations in Vidarbha. Navegaon is situated in the Arjuni Morgaon subdivision of Gondia district, while Melghat is positioned in the northern region of Amravati District. The two regions are approximately 260 kilometres apart.

Previous mycological literature indicates that the Vidarbha region remains unexplored in terms of mycological research Consequently, the authors have chosen to conduct a survey in this region. During several mycological surveys, they collected 12 fungi, from which they selected two rare species. In 1882, Carlo Luigi Spegazzini identified *Amerosporium*, a member of the Sclerotiniaceae family, using *Amerosporium polynematoid* as a type species. Cooke established *Bactrodesmium* in 1883. In 1886, Saccardo reduced Bactrodesmium to synonymy with Clasterosporium (Schweinitz1832), but this treatment was not accepted by subsequent au-thors (e.g. Ellis 1959, Zhang et al. 2016). Some unusual ele-ments such as distosepta and also oblique and longitudinal septain conidia were accepted by Ellis (1976). Two new species from South Africa and Switzerland were discovered by Ellis M.B. (1976) on dead gymnospermic and angiospermic wood branches. Recently Barbosa, Flavia Rodrigues et al (2024) reported a new species from *Bactrodesmium amazonicum* sp. nov. from the Brazilian Amazon rainforest. The new species *B. amazonicum* differs from the previously known species in the genus by the setose sporodochium. Martina Reblova (2020).

The newly discovered systematic placement of *Bactrodesmium abruptum*. The genus is distinguished by clavate, transversely septate conidia and dematiaceous hyphomycetes that generate sporodochia. Following a thorough investigation with the recognised species.

Therefore, the current collection is accepted as a new species, specifically *Bacterodesmium indicum* sp. nov. and *Amerosporium gawilgadium* sp.nov, *Bactrodesmium indicum* sp,nov.

MATERIAL AND METHODS

The collected specimens were wrapped in butter paper and bagged in envelope. By taking hand sections, semi - permanent microscopic slides were prepared by using cotton blue as stain. Sections of the material were studied

with the help of relevant keys and literature (Ainsworth et al 1973, Barnett et al 1972, Bilgrami et al 1979, Bilgrami et al 1991, Jamaluddin et al 2004, Sarbhoy et al 1996, Teng 1996,). The specimens were deposited in Ajrekar Mycological Herbarium, (AMH) Agharkar Research Institute (ARI) Pune 411004.

TAXONOMY

***Amerosporium gawilgadium* sp.nov (Plate I,Fig:1 A,B,C,)**

(Etymology: loacality Gawilgad, Melghat)

Pycnidis semi-immersed, superficial, gregarious, olivaceous, hemispherica, thin walled, setose, indehisent, measure 168. 3-244 x 982. 5-474. 3 µm.; setae rigidsimple divergent, brown, measure 133-209 x 8-15 µm.; conidiophore hyaline measure 8-11 µm.; conidia ellipsoid, cylindric, pale olivaceous, greenish in mass, hyaline measure 7. 6-11. 4 µm.

Holotypus: On dead needle of *Phoenix sylvestris* (L.)Roxb. (Fam:Arecaceae) Legit N. S. Dharkar at Gawilgad Melghat (Dist-Amravati) on 12/08/2005 AMH No. 9038 (Holotype).

Table 1: Comparision between species of *Amerosporium*.

S.No.	Species	Pycnidia	Setae	Conidia
1	*A.indicum* Pande,A	240-320 X 180-240 µm	200-300 X 4-6 µm	8-12 X 3-4 µm
2	*A.applanatum* Berg.et.Curt.	240-300 x 165-240 µm	36-66 x 4.5-6 µm	5-6 x 3 µm
3	A.sinense Teng	230-250 µm diam	160-300 x 10-12 µm	9.5-12 x 2-2.5 µm
4	*A.viridi* Wehmeyer	100-300 µm diam	50-100 x 5-5.5 µm	9-11 x 1.5-2 µm
5	*A.gawilgadium* sp.nov	168.3-244 x 982.5-474.3 µm	133-209 x 8-15 µm	7.6-11.4 µm.

Bactrodesmium indicum sp.nov**. (Plate I, Fig:2 A,B,C)**

(Etymology: For homage to India)

Sporodochia scattered, punctiform, blackshininig, measure 57.0-133.0 x122.4-715.0 µm: Conidiophores fasiculate, simple hyaline measure 11.4-22.8 µm long: conidia ellipsoidal to clavate, rounded at apex, truncate at the base, smooth, mid to brown with hyaline, based cell, 3-7 septate, some times with 1-2 longitudinal oblique pseudo septa measure 30.4-65.6x8-11 µm.

Holotypus: On unidentified monocot root legit N.S.Dharkar at Navegaopn on 12-11-2003 No.AMAH 9065.(holotype).

Table 2: Comparision between species of *Bactrodesmium*.

Species	Sporodochia	Conidiophore	Conidia
B.rahimii	-----	40x 13 µm	32-58 x 13-18 µm
B.longisporum	-------	15-20 x 1-3 µm	50-80 µm
Bactrodesmium simile R.M. Arias, Heredia & R.F. Castañeda		12.5–29 × 2–5 µm.	19–24 × 12–16 µm
B.indicum sp,nov	57-133.0 x 122.4-715 µm	11.4-2.8 µm long	30.4-65.6 x 8-11 µm

RESULT AND DISCUSSION

The present fungal specimen, upon comparison with previously described species, has been found to be distinct. *A. gawligadium* sp. nov. differs notably from the four known species: *A. indicum* (A. Pande, 1976), *A. applanatum* (Berg. & Curt.; Gupta P.C., 1996), *A. sinense* (Teng S.C., 1996), and *A. viridi* (Wehmeyer, 1964). It is characterized by comparatively larger pycnidia and smaller setae than those of *A. indicum* and *A. viridi*. Additionally, the conidia are larger than those of *A. applanatum*.

Within the genus *Bactrodesmium*, the conidiophores of the present specimen are smaller than those of *B. rahimii* and *B. longisporum* (Eliis M.B., 1976), while the conidia are larger than those of *Bactrodesmium simile* (Rosa Maria Arias et al., 2016) and *B. rahimii* (Eliis M.B., 1976).

Based on the comparative analysis presented in Table 1 and Table 2, the morphological differences justify the classification of the studied specimen as a new species**.**

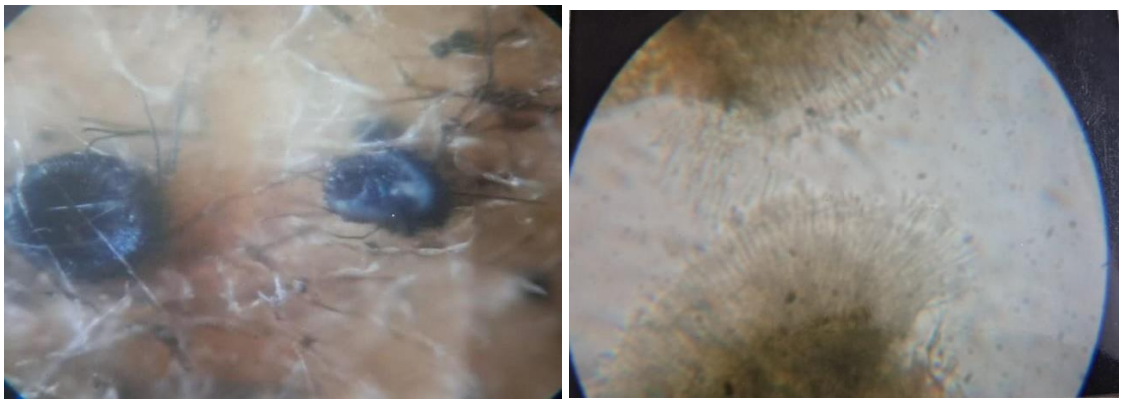
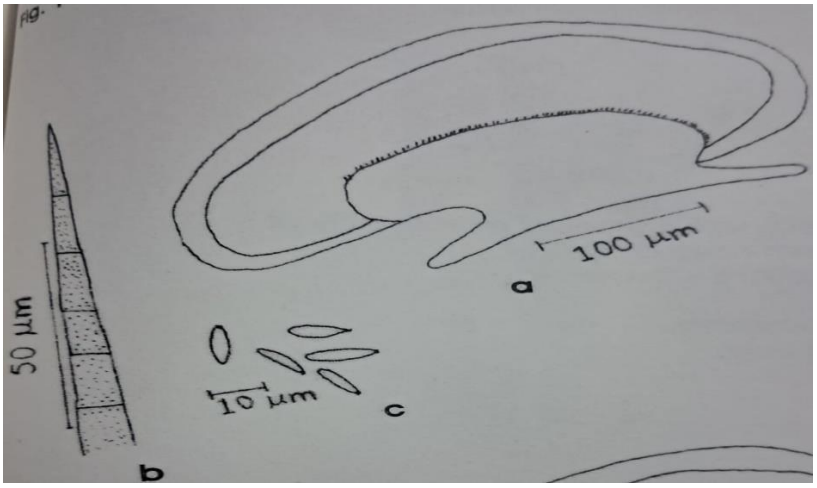
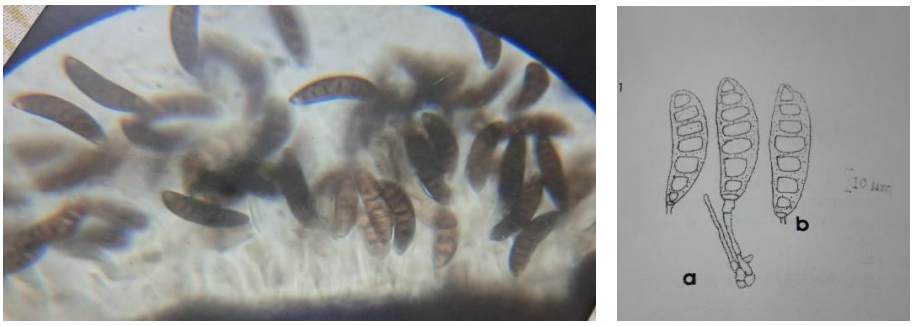


Fig 1: A) Habit B) Conidiophore with Conodia



C) a) Pycnidia, b) Setae, c) Conidia.

Fig 2: A)Sporodochium B)Conidiophore with Conidia (attachment)



C) Conidiophore with Conidia (attachment)

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