International Research Journal of Biological Sciences _____ ISSN 2278-3202
Vol. **2(1),** 67-69, January **(2013)** *Int. Res. J. Biological Sci.*

Short Communication

Diversity of *Xylaria* Species from Amravati Region, Amravati, MS, India

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Available online at: www.isca.in
Received 12th November 2012, revised 18th November 2012, accepted 2nd December 2012

Abstract

In due course of mycological survey of different forest of Amravati District, the authors collected many interesting fungi. The fungi reported in this paper are rare to Maharashtra State. Xylariaceae is a large and relatively well known Ascomycetes family found in most countries, which contain 35 genera. Most of them species are saprobic wood degraders while some are endophytic or even associates with termite nests. Xylaria is large and first described genus of family xylariaceae. The xylaria is characterized by sac like perithecia, ascocarp and long chains of asci with variable numbers of ascospores. The specimen of xylaria collected from different parts of Amravati region Amravati, Maharashtra, India. The collected specimen were screened by standard methods. Each specimen was examined on the basis of morphological and microscopical characters. The measurement or dimensions of stromata, perithecia, asci and ascospores were taken. All the species xyalria mellisii, xylaria axifera, xylaria bambusae, xylaria pallida, xylaria feejeensis, xylaria aristata, xylaria kamatii and xylaria microceras in the study were examined and identified on the basis of morphology.

Keywords: Taxonomy, *Xylaria species*

Introduction

Xylariaceae is a large and relatively well known Ascormycetes family found in most countries[1] contain 35 genera[2]. Most of them species are saprobic wood degraders like many species actively decay wood of living or dead angiosperms[3], while some are endophytic like same species are common endophytes in many tropical plants including palm, orchids and ferns[4], or even associated with termites nets. The nature of *Xylaria* in the nests of fungus - growing termites has been a point of debate[5]. *Xylaria* is a large and first described genus of the xylariaceae[6], *Xylaria* is characterized by sac like perithecium, ascocarp, and long asci with variable number of the ascospores. Majority the *xylaria* species are host-specific but many question about the *Xylaria* species remain unanswered, especially with regard to colonization of hosts[7]. Study and identification has been done on the basis of morphological and microscopical characters. Some species are difficult to identify from their colour, size and shape[1]. In Maharashtra major contribution on *Xylaria* reported Alka Pande[8].

Material and Methods

Xylaria specimens collected from different parts of the Amravati region from Maharashtra,India. The collected specimen were wrapped in the butter paper and packed in brown colored 5" x 3" packet. The location, host name and date of collection has been written on the brown packet. Each specimen is examined on the basis of the morphological characters with host specificity and microscopically characters of perithecia, asci and ascopores. The dimensions of perithecia, asci and ascopores has been taken for 10, 20 and 50 times respectively. Lactophenal cotton blue and distilled water was used to mounting the media for microscopy. Observation and photography were carried out (Plate-I a,b,c and d). These collections were studied in respect of Morphology, taxonomy and their specific identify with the help of relevant literature[9,10,2,11,12-15].

Results and Discussion

***Xylaria mellisii* (Berk.) Cooke:** Stroma erect, simple, brown, stalked, 3-4 cm long stromata; stroma is whitish brown,rough, pointed apex; stalk is long, dark brown, hairy; perithecia many, globase, flask shaped embedded in stroma, arranged in periphery of the stroma, 286-507 × 260-286 µm; ascus numerous, brown, long, 65-89 × 3.28-6.56 µm; ascospore dark brown, 13.12-16.4 × 3.28-6.56µm.

Matrix: on dead wood of unidentified host, Rahatgaon,Dist-Amravati, MS, India

***Xylaria axifera* Mon:** Stroma of this species is erect, simple, stalked, blackish brown, cylindrical, 2-4 mm long; stroma irregular, brown colored, apex pointed, rough outer surface; stalk smooth, hairy, long; perithecia flattened but some are rounded, many, present at the periphery of the stroma, 390-650 × 325-455 µm; ascus many ,long, brownish, 85.28-114.8 × 3.28-6.56 µm; ascospore brown, elongated, 16.4-22.96 × 3.28-6.56 µm.

Matrix: On dead wood of unidentified host,Pohara, Amravati, MS, India.

***Xylaria bambusae* Pande and Kamat:** Stroma erect, simple, black ,cylindrical, stalked, 2-3 cm long stromata; stroma black, disc like, short, apex rounded; stalk long black colored; perithecia rounded to flattened, globous, few, present at the periphery of stroma, 455-546 × 390-494 µm; ascus many, long, light brown, 65.6-114.8 × 3.28-6.56 µm; ascospore elongated, light brown, 16.4-22.96 × 3.28-6.56 µm.

Matrix: On dead wood of Bamboo, Pohara, Amravati, MS, India.

***Xylaria pallida* Berk and Cooke:** Stroma erect, simple, dark black, cylindrical, short with short stalk stromata; stroma rough,short, black, rough surface, apex rounded; perithecia, globous, vary in shape, majorly rounded but some are flattened at the periphery of stroma, 195-364 × 195-338 µm; ascus long, light brown, 49.2-65.6 × 3.28 µm; ascospore small, light brown, 6.56-13.12 × 3.28µm.
Matrix: On dead wood of *Tectona grandis*, Pohara Dist-Amravati, MS, India.

***Xylaria feejeensis* (Berk.) Fries:** Stroma erect, cylindrical, brown, stalked stromata; stroma brown, rough, stalk, short; perithecia rounded, few in stroma, globous, some are flattened, present at the periphery of the stroma, 247-338 × 195-260 µm; ascus many, long, light brown, 82-85.28 × 3.28-6.56 µm; ascospore light brown, 9.84-16.4 × 3.28-6.56µm.
Matrix: On dead wood of unidentified host,Pohara,Amravati, M.S.,India

Xylaria aristata Mont.: Stroma erect, irregular, branched, long, rough surface, stalked, black, 3.5-4 cm long stromata, stroma black, two branches on one stalk, stalk black, medium, rough; perithecia many, ostiolate, broad at base, tapered at the tip, flask shaped, embedded in stroma, vary in shape, 260-585 × 260-520 µm; ascus long, many, dark brown, 91.48-98.4 × 3.28 µm; ascospore, dark brown 6.56-13.12 × 3.28 µm.
Matrix: On dead wood of unidentified host, Pohara, Amravati, M.S., India

***Xylaria kamatii* Pande**: Stroma erect, simple, stalked, blackish brown, irregular, 0.8-1.4 cm long srtomata; stroma brownish, rough surface, acute apex; stalk of this species has short, black; perithecia flattened, many broad at the periphery, embedded in stroma, 286-520 × 324-456 µm; ascus many, long dark brown, 82-91.84 × 6.56-9.84 µm; ascospore dark brown, 13.12-19.68 × 6.56-9.84 µm.
Matrix: On dead wood of unidentified host,Pohara,Amravati, M.S.,India

Xylaria microceras (Mont.) Fr. (Nov.Act.Reg.Soc. Sci.Upsal. Ser.3,1:28,1851) (figure-8): The species has erect , small, stalked, brown, simple, 0.3-1 cm long srtomata; stroma brown, apex acute, rough surface; stalk blackish, hairy, short; the perithecia are rounded, few per stroma, globous, flask shaped, ostiolate, 364-520 × 364-390 µm; ascus many brown, 98.4-114.8 × 3.28-6.56 µm; ascospore brown, 9.84-16.4 × 3.28-6.56 µm, other than the perithecial measurement all features are coincide with *Xylaria microceras.*
Matrix: On dead wood of unidentified host,Pohara,Amravati, M.S.,India

Conclusion

In the Present paper purely basic taxonomic study of the species of *Xylaria* investigated. On comparison table indicates that species are different on the basis of morphotaxonomy. *Xylaria* species are mostly growing on dead parts of the higher plants. This reports additions to the Fungi of Maharashtra.

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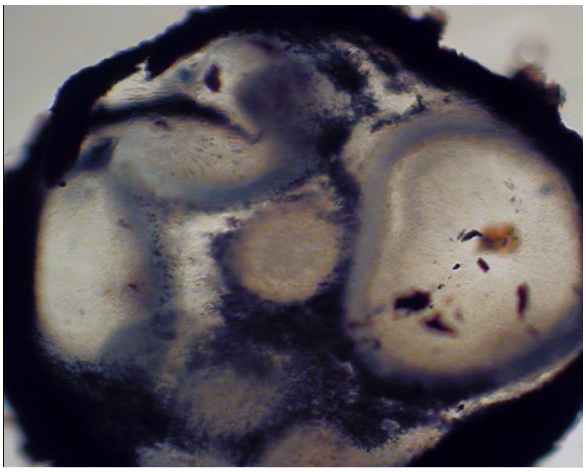
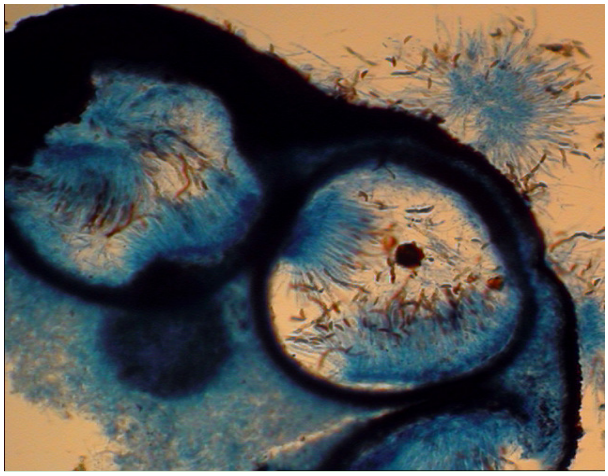
Table-1
Comparison between the species of *Xylaria*

Sr no.	Perithecia In(µm)	Ascus In(µm)	Ascospore In (µm)	Species
1.	286-507 × 260-286	65-89× 3.28-6.56	13.12-16.4 × 3.28-6.56	*Xylari mellisii* (Berk) Cooke
2.	390-650 × 325-455	85.28-114.8 × 3.28-6.56	16.4-22.96 × 3.28-6.56	*Xylaria axifera*
3.	390-650 × 325-455	65.6-114.8 × 3.28-6.56	16.4-22.96 × 3.28-6.56	*Xylaria bambusae* Pande and Kamat
4.	195-364 × 195-338	49.2-65.6 × 3.28	6.56-13.12 × 3.28	*Xylaria pallida* Berk. & Cooke
5.	247-338 × 195-260	82-85.28 × 3.28-6.56	9.84-16.4 × 3.28-6.56	*Xylaria feejeensis* (Berk.) Fries Var.
6.	260-585 × 260-520	91.48-98.4 × 3.28	6.56-13.12 × 3.28	*Xylaria aristata* Mont.
7.	286-520 × 324-456	82-91.84 ×6.56-9.84	13.12-19.68 × 6.56-9.84	*Xylaria kamatii* Pande
8.	364-520 × 364-390	98.4-114.8 ×3.28-6.56	9.84-16.4 × 3.28-6.56	*Xylaria microceras* (Mont.)

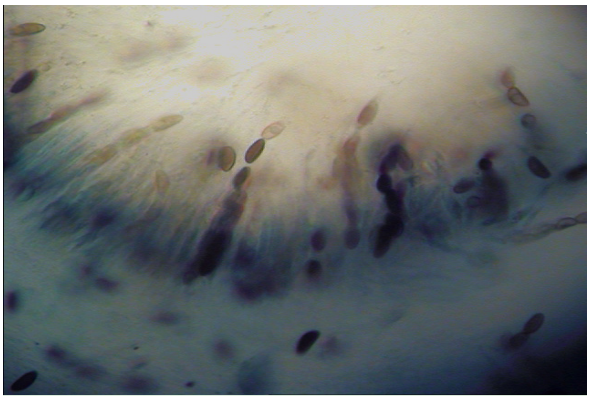
Plate- I



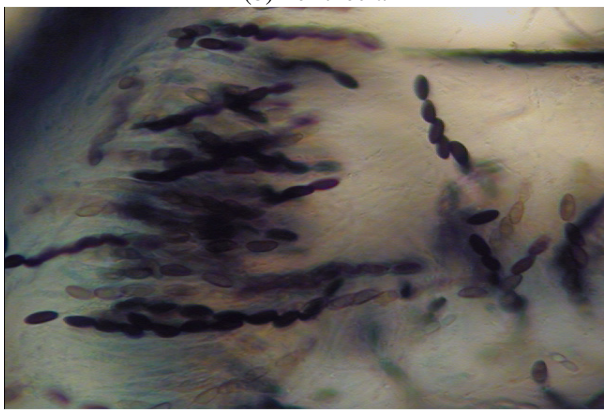
(a) T.S. Stroma



(b) Perithecia



(c) Asci



(d) Ascospores