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Diversity of wood-inhabiting marine fungi from muthupet mangrove environs of Tamilnadu, India

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Abstract

Totally 23 species of obligate marine fungi belonged to 18 genera were recorded from driftwood samples collected from Muthupet mangrove environs of Tamilnadu, India. Among them, 15 species belonged to 10 genera were ascomycetes, 1 species belonged to 1 genus was basidiomycete and 7 species belonged to 7 genera were deuteromycetes. *Halosarpheia marina, Halocyphina villosa, Lignincola longitrostris* were commonly recorded from Muthupet mangrove environs. Species of *Sphaerulina albispiculata* and *Cystosphora rhizophorae* (deuteromycetes) are new report for India.

Key words : Drift wood, Muhupet mangrove, obligate marine fungi

INTRODUCTION

Mangrove vegetation or 'Mangal' is the tropical counterpart of tidal salt marshes of temperate region. The mangal, composed of a wide variety of shoreline trees and bushes, belonged to numerous often unrelated families (Walsh, 1974; Chapman, 1976). Mangrove plants are morphologically and physiologically adapted to habitats, which are characterized by the presence of high salinity, tidal inundation, high wind velocity, high temperature and anaerobic clayey soils. These forests have great ecological importance, social significance and economic value. Mangrove forests generate considerable amount of detritus such as leaf litter, wood debris and inflorescences, and hence constitute an ideal environment and microhabitats for many detritus dependent fauna and microbes. Productivity in mangrove water depends on the extent of mangrove canopy that supplies carbon, nitrogen and phosphorus. The Indian peninsula comprises approximately 7000 km^2 of mangroves, out of which, 70, 18 and 12% exist at the East coast, Andaman and Nicobar Islands and West coast respectively (Krishnamurthy *et al*., 1987).

Microbes in the marine environment form an important link in the biogeochemical cycling, and the cycling activities often determine the productivity of any ecosystem. They also play a role in the clean-up of the environment from pollution. As they inhabit the unusual conditions, now-a-days scientists look at them as a source for the production of novel secondary metabolites. Therefore it becomes important to understand groups or organisms such as fungi which are adapted to the unusual habitats including the marine ecosystems.

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In the marine ecosystems, fungi hold a wide range of habitats viz., water -including sea foam, sediments and plant and animal debris. Among the plant detritus, intertidal driftwoods are the important and interesting substrates for the activity of fungi and hence it is suitable for study of the diversity of fungi. Such substrates are expected to harbour rich and novel fungal biodiversity because they are the part of the plants of unknown origins. They get exposed to sunlight and atmosphere and also wetting and drying at frequent intervals due to the tidal variations. The present study deals with diversity of obligate marine fungi isolated from the driftwood samples of Muthupet mangrove environs, Tamilnadu, India.

MATERIALS AND METHODS

Study area

The present study was carried out in the Mangrove environs of Muthupet, Thiruvarur District, Tamil Nadu, India (Lat. 10° 20' N; Long. 79° 35' N). Muthupet is the largest mangrove forest in Tamil Nadu. It is a reserve forest and it covers a total area of 120 sq km in three districts of Nagapattinam, Thiruvarur and Thanjavur, and is traversed by numerous channels and creeks. 'Paminiyar', 'Koraiyari', 'Kilaithangiyar' and 'Marakakoraiyar' flow through Muthupet mangrove forest and form lagoon which ultimately opens into the Palk Strait. The present investigation was carried out in five different stations of Muthupet mangroves including Koraiyar, Mullipallam lagoon, Xeviermunai, Vembai udaippu and Sellimunai.

Sampling programme

Litter (wood) samples from the sampling stations were collected during low tide hours. The collection was

made on four occasions during 2003, from each station in the months of January, April, August and December. Totally, 100 wood samples were collected from each station. The collected samples were kept in sterile polythene bags and transported to the laboratory for further investigations.

Fungi from litter samples (Direct examination method)

The collected litter (wood) samples from mangrove environs were directly examined under dissection microscope for the presence of ascocarps, basidiocarps, pycnidia or conidia. Such fruit bodies were transferred with a sterile needle to a microscope slide, torn apart in a drop of water to expose the spores and carefully squeezed under a cover glass and observed under the microscope. In cases of fungi present in the form of sterile elements of the ascocarps, such as paraphyses and pesudoparaphyses, they were allowed to develop further. The litter (wood) samples were placed in new plastic bags, separately, few drops of sterilized seawater were added to each bag in order to maintain with in the bags. The sample bags were tide with a string and incubated at 30±2°C for a period of 7-10 days. The incubated samples are examined under the microscope. Photomicrographs were made and the fungi were identified using the manual of Marine Mycology - The Higher Fungi (Kohlmeyer and Kohlmeyer, 1979) and the publication (Kohlmeyer and Kohlmeyer, 1992). Percentage of frequency of each fungus was calculated.

$$\% \text{ frequency} = \frac{\text{No. of wood samples in which particular fungus occurred}}{\text{Total number of wood sample examined}} \times 100$$

RESULTS

Mycoflora from litter (wood) samples

Totally 23 species (18 genera) of marine fungi belonged to ascomycetes (15 species), basidiomycete (1 species) and deuteromycetes (7 species) were recorded from five different stations of Muthupet mangrove environs. The details of fungal diversity from five stations of Muthupet mangrove environs are listed in tables 1-5 and figure 1a-p.

Koraiyar

Totally 18 species belonged to 15 genera were recorded in this station. Among them, 10 genera/13 species belonged to ascomycetes and 5 genera/5 species belonged to deuteromycetes, whereas the basidiomycetes was absent in this station. Maximum of 13 species were recorded in the month of January and a minimum of 9 species were recorded during the month of December. Five species namely, *Aniptodera chesapeakensis* (44%), *Halosarpheia abonnis* (30.25%), *H. marina* (36%), *Lignincola longirostris* (43.25%) and *Cirrenalia macrocephala* (29.5%) were recorded frequently. Among others, *Didymosphaeria enalia*, *Didymosphaeria* sp., *Halosphaeria* sp., *Lophiostoma mangrovei, Payosphaeria* sp., *Sphaeralina albispicualta, Coniothyrium obiones, Humicola* sp. and *Periconia prolifica* were recorded occasionally. The percentage of occurrence of other fungi was less (<10%) and also rare (Table 1).

Mullipallam lagoon

Totally 19 species belonged to 16 genera were recorded from Mullipallam lagoon. Among them 8 genera/11 species were belonged to ascomycetes, one genus/one species was belonged to basidiomycetes, and 7 genera/ 7 species were belonged to deuteromycetes. Maximum of 15 species were recorded during the month of December and minimum of 12 species were recorded in the month of January. *Halosarpheia abonnis* (44%), *H. marina* (34%), *Halosphaeria quatricornuta* (49%), *Lignincola longistrostris* (45.25%), *Lophiostoma mangrovei* (42.75), *Halocyphina villosa* (38.75%), *Periconia prolifica* (26.75%) and *Phialophrophoma litoralis* (25.75%) were recorded frequently. Among the remaining 11 species, 9 species were occasional and 2 species were rare (Table 2).

Xavier munai

The Xevier munai station had maximum number of species. Totally 21 species belonged to 17 genera were recorded. Among them, 9 genera / 13 species were belonged to ascomycetes, one genus/one species was belonged to basidiomycetes and 7 genera / 7 species were belonged to deuteromycetes. Maximum of 14 species were recorded during the month of April and minimum of 11 species were recorded in the months of August and December. The most common species recorded was *Halocyphina villosa* (52.75%). *Halosarpheia marina* was the next most common species and was recorded from 50.75% of the samples. *Lignincola longirostris* (49.0%), *Periconia prolifica* (42.75%) and *Humicola* sp. (30.75%) were recorded frequently. Among the remaining 16 species, 10 species were recorded as occasional and 6 species were as rare (Table 3).

Vembai udiappu

Altogether 20 species belonging to 17 genera were recorded form this station. Among them, 9 genera/12 species were belonged to ascomycetes, and one genus/ one species was belonged to deuteromycetes. A maximum of 16 species was recorded from this station during the month of April and minimum of 11 species was recorded during the month of December. *Halocyphina villosa* was the most common species in this station and contributed 50.25% of the samples. *Halosarpheia abonnis* (36.5%), *Helicascus kanaloanus* (44.25%), *Lignincola longirostris* (37.75%), *Lulworthia*

Table 1. List of fungi recorded in drift wood samples from Koraiyar

S.No.	Isolated organism	% frequency January	April	August	December	Mean frequency	class
	ASCOMYCETES						
1.	*Aniptodera chespeakensis* Shearer et Miller	32	45	37	62	44	F
2.	*Didymosphaeria enalia* Kohl.	15	-	28	35	19.5	O
3.	*Didymosphaeria* sp.	32	-	21	-	13.25	O
4.	*Halosarpheia abonnis* Kohl.	26	53	-	42	30.25	F
5.	*H. marina* (Cribb et Cribb) Kohl.	58	39	47	-	36	F
6.	*Halosarpheia* sp.	-	-	18	-	4.5	R
7.	*Halosphaeria quatricornuta* Cribb et Cribb	-	-	-	-	-	-
8.	*Halosphaeria* sp.	31	18	-	26	18.75	O
9.	*Helicascus kanaloanus* Kohl.	10	-	15	12	9.25	R
10.	*Lignincola longirostris* (Cri. et Cri.) Kohl.	55	36	49	33	43.25	F
11.	*Lophiostoma mangrovei* Kohl. et Vittal	33	-	-	15	12	O
12.	*Lulworthia grandispora* Meyers	-	-	-	-	-	-
13.	*Lulworthia* sp.	-	15	18	-	8.25	R
14.	*Payosphaeria* sp.	26	-	36	-	16.25	O
15.	*Sphaerulina albispiculata* Tubaki	-	28	21	-	12.25	O
	BASIDIOMYCETES						
16.	*Halocyphina villosa* Kohl. et Kohl.	-	-	-	-	-	-
	DEUTEROMYCETES						
17.	*Cirrenalia macrocephala* (Koh.) Meyer et Kohl.	33	48	-	37	29.75	F
18	*Coniothyrium obiones* Jaap	-	22	31	-	13.25	O
19.	*Cystospora rhizophorae* Kohl. et Kohl.	-	-	15	-	3.75	R
20.	*Heleococcum japonense* Tubaki	-	-	-	-	-	-
21.	*Humicola* sp.	22	25	-	16	15.75	O
22.	*Periconia prolifica* Anastasiou	25	31	-	-	14	O
23.	*Phialophorophoma litoralis* Barghroon et Linder	-	-	-	-	-	-

C- common; F – frequent; O – occasion; R - rare

Table 2. List of fungi recorded in drift wood samples from Mullipallam lagoon

S.No.	Isolated organism	% frequency January	April	August	December	Mean frequency	class
	ASCOMYCETES						
1.	*Aniptodera chespeakensis* Shearer et Miller	25	-	38	30	23.25	O
2.	*Didymosphaeria enalia* Kohl.	-	48	-	36	21	O
3.	*Didymosphaeria* sp.	-	-	-	-	-	-
4.	*Halosarpheia abonnis* Kohl.	63	49	26	38	44	F
5.	*H. marina* (Cribb et Cribb) Kohl.	58	-	46	32	34	F
6.	*Halosarpheia* sp.	-	-	-	-	-	-
7.	*Halosphaeria quatricornuta* Cribb et Cribb	43	68	39	42	48	F
8.	*Halosphaeria* sp.	-	46	-	36	20.5	O
9.	*Helicascus kanaloanus* Kohl.	-	-	-	-	-	-

10.	*Lignincola longirostris* (Cri. et Cri.) Kohl.	39	48	61	33	45.25	F
11.	*Lophiostoma mangrovei* Kohl. et Vittal	25	31	46	69	42.75	F
12.	*Lulworthia grandispora* Meyers	-	15	12	-	6.75	R
13.	*Lulworthia* sp.	13	-	18	-	7.75	R
14.	*Payosphaeria* sp.	-	31	28	-	14.25	O
15.	*Sphaerulina albispiculata* Tubaki	-	-	-	-	-	-
	BASIDIOMYCETES						
16.	*Halocyphina villosa* Kohl. et Kohl.	68	-	39	48	38.75	F
	DEUTEROMYCETES						
17.	*Cirrenalia macrocephala* (Koh.) Meyer et Kohl.	18	-	26	33	19.25	O
18	*Coniothyrium obiones* Jaap	-	51	-	36	21.75	O
19.	*Cystospora rhizophorae* Kohl. et Kohl.	21	-	34	-	13.75	O
20.	*Heleococcum japonense* Tubaki	-	33	18	23	18.5	O
21.	*Humicola* sp.	-	46	-	39	14.75	O
22.	*Periconia prolifica* Anastasiou	46	28	-	33	26.75	F
23.	*Phialophorophoma litoralis* Barghroon et Linder	28	32	19	24	25.75	F

C- common; F – frequent; O – occasion; R - rare

Table 3. List of fungi recorded in drift wood samples from Xevier munai

S.No.	Isolated organism	% frequency January	April	August	December	Mean frequency	class
	ASCOMYCETES						
1.	*Aniptodera chespeakensis* Shearer et Miller	-	35	-	21	14	O
2.	*Didymosphaeria enalia* Kohl.	18	-	40	-	14.5	O
3.	*Didymosphaeria* sp.	-	-	-	-	-	-
4.	*Halosarpheia abonnis* Kohl.	38	46	-	-	21	O
5.	*H. marina* (Cribb et Cribb) Kohl.	63	53	49	38	50.75	C
6.	*Halosarpheia* sp.	16	-	-	22	9.5	R
7.	*Halosphaeria quatricornuta* Cribb et Cribb	-	18	-	-	4.5	R
8.	*Halosphaeria* sp.	25	32	-	-	14.25	O
9.	*Helicascus kanaloanus* Kohl.	-	-	29	36	16.25	O
10.	*Lignincola longirostris* (Cri. et Cri.) Kohl.	55	39	49	53	49	F
11.	*Lophiostoma mangrovei* Kohl. et Vittal	35	-	46	-	20.25	O
12.	*Lulworthia grandispora* Meyers	-	18	16	-	8.5	R
13.	*Lulworthia* sp.	25	-	18	-	10.75	O
14.	*Payosphaeria* sp.	-	-	-	-	-	-
15.	*Sphaerulina albispiculata* Tubaki	-	43	-	51	23.5	O
	BASIDIOMYCETES						
16.	*Halocyphina villosa* Kohl. et Kohl.	68	39	49	55	52.75	C
	DEUTEROMYCETES						
17.	*Cirrenalia macrocephala* (Koh.) Meyer et Kohl.	-	24	-	-	6	R
18	*Coniothyrium obiones* Jaap	-	-	32	25	14.25	O
19.	*Cystospora rhizophorae* Kohl. et Kohl.	22	-	-	15	9.25	R
20.	*Heleococcum japonense* Tubaki	-	15	-	-	3.75	R

21.	*Humicola* sp.	36	48	-	39	30.75	F
22.	*Periconia prolifica* Anastasiou	38	42	59	29	42	F
23.	*Phialophorophoma litoralis* Barghroon et Linder	-	22	24	-	14	O

C- common; F – frequent; O – occasion; R - rare

Table 4. List of fungi recorded in drift wood samples from Vembai udaippu

S.No.	Isolated organism	% frequency January	April	August	December	Mean frequency	class
	ASCOMYCETES						
1.	*Aniptodera chespeakensis* Shearer et Miller	25	18	-	-	10.75	O
2.	*Didymosphaeria enalia* Kohl.	-	-	-	-	-	-
3.	*Didymosphaeria* sp.	-	35	23	-	14.5	O
4.	*Halosarpheia abonnis* Kohl.	55	-	38	53	36.5	F
5.	*H. marina* (Cribb et Cribb) Kohl.	28	18	-	35	20.25	O
6.	*Halosarpheia* sp.	39	-	18	-	14.25	O
7.	*Halosphaeria quatricornuta* Cribb et Cribb	-	35	28	16	19.75	O
8.	*Halosphaeria* sp.	-	-	-	-	-	-
9.	*Helicascus kanaloanus* Kohl.	36	39	58	44	44.25	F
10.	*Lignincola longirostris* (Cri. et Cri.) Kohl.	53	32	18	48	37.75	F
11.	*Lophiostoma mangrovei* Kohl. et Vittal	-	28	19	-	11.75	O
12.	*Lulworthia grandispora* Meyers	36	42	56	-	33.5	F
13.	*Lulworthia* sp.	-	-	-	-	-	-
14.	*Payosphaeria* sp.	-	35	-	-	8.75	R
15.	*Sphaerulina albispiculata* Tubaki	28	45	-	33	26.5	F
	BASIDIOMYCETES						
16.	*Halocyphina villosa* Kohl. et Kohl.	32	65	49	55	50.25	C
	DEUTEROMYCETES						
17.	*Cirrenalia macrocephala* (Koh.) Meyer et Kohl.	-	-	25	-	6.25	R
18	*Coniothyrium obiones* Jaap	43	29	-	31	25.75	F
19.	*Cystospora rhizophorae* Kohl. et Kohl.	33	22	33	26.5	F	
20.	*Heleococcum japonense* Tubaki	-	18	-	22	10	R
21.	*Humicola* sp.	45	-	36	28	27.25	F
22.	*Periconia prolifica* Anastasiou	49	53	32	-	33.5	F
23.	*Phialophorophoma litoralis* Barghroon et Linder	28	19	15	-	15.5	O

C- common; F – frequent; O – occasion; R - rare

Table 5. List of fungi recorded in drift wood samples from Sellimuani

S.No.	Isolated organism	% frequency January	April	August	December	Mean frequency	class
	ASCOMYCETES						
1.	*Aniptodera chespeakensis* Shearer et Miller	38	24	-	18	20	O
2.	*Didymosphaeria enalia* Kohl.	-	16	18	-	8.5	R
3.	*Didymosphaeria* sp.	-	-	-	-	-	-
4.	*Halosarpheia abonnis* Kohl.	24	36	-	18	19.5	O
5.	*H. marina* (Cribb et Cribb) Kohl.	33	48	56	-	34.25	F
6.	*Halosarpheia* sp.	-	19	-	-	4.75	R

7.	*Halosphaeria quatricornuta* Cribb et Cribb	15	22	-	-	9.25	R
8.	*Halosphaeria* sp.	-	-	-	15	3.72	R
9.	*Helicascus kanaloanus* Kohl.	-	-	12	18	7.5	R
10.	*Lignincola longirostris* (Cri. et Cri.) Kohl.	59	47	48	49	50.75	C
11.	*Lophiostoma mangrovei* Kohl. et Vittal	-	-	25	28	13.25	O
12.	*Lulworthia grandispora* Meyers	18	24	-	-	10.5	O
13.	*Lulworthia* sp.	-	-	-	-	-	-
14.	*Payosphaeria* sp.	-	-	-	-	-	-
15.	*Sphaerulina albispiculata* Tubaki	22	-	16	-	9.5	R
	BASIDIOMYCETES						
16.	*Halocyphina villosa* Kohl. et Kohl.	59	43	35	26	40.75	F
	DEUTEROMYCETES						
17.	*Cirrenalia macrocephala* (Koh.) Meyer et Kohl.	-	23	-	18	10.25	R
18	*Coniothyrium obiones* Jaap	35	45	32	49	40.25	F
19.	*Cystospora rhizophorae* Kohl. et Kohl.	-	-	18	-	4.5	R
20.	*Heleococcum japonense* Tubaki	-	22	-	-	5.5	R
21.	*Humicola* sp.	35	33	-	44	28	F
22.	*Periconia prolifica* Anastasiou	43	-	33	-	19	O
23.	*Phialophorophoma litoralis* Barghroon et Linder	-	-	-	-	-	-

C- common; F – frequent; O – occasion; R - rare

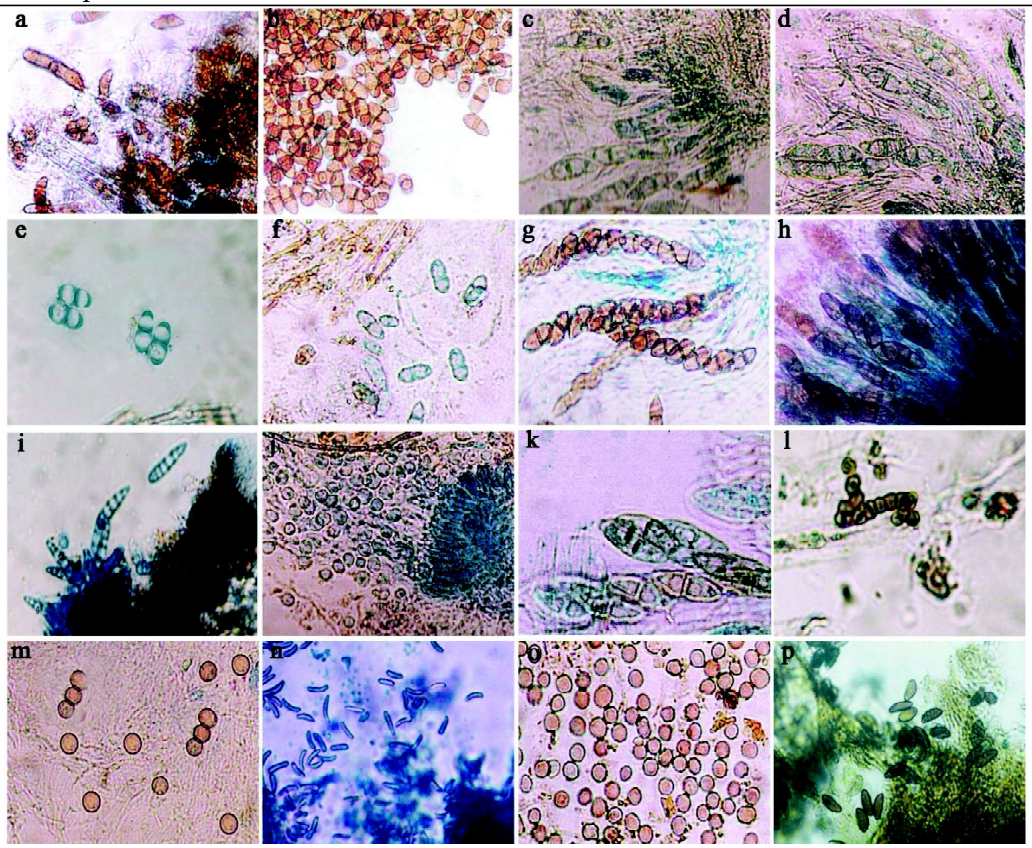

Fig. 1a-p. Microscopic views (bright field) of marine fungi recorded from Muthupet mangrove environs. a - *Didymosphaeria enalia,* b - *Didymosphaeria* sp., c - *Halosarpheia abonnis,* d - *Halosaripheia* sp., e - *Halosphaeria* sp., f - *Halosphaeria quatricornuta*, g - *Helicascus kanaloanus*, h - *Lignincola longirostris*, i - *Sphaerulina albispiculata*, j - *Halocyphina villosa*, k - *Lophiostoma mangrovei*, l - *Cirrenalia macrocephala*, m - *Periconia prolifica*, n - *Cystospora rhizophorae*, o - *Coniothyrium obiones*, p - *Heleococcum japonense*

grandispora (33.5%), *Sphaeralina albispiculata* (26.5%), *Coniothyrium obiones* (25.75%), *Cystospora rhizophorae* (26.5%), *Humicola* sp. (27.25%) and *Periconia prolifica* (33.5%) were recorded frequently. From the remaining 10 species, 7 species recorded as occasional and 3 species as rare (Table 4).

SELLIMUNAI (RIVER MOUTH)

Totally 19 species (16 genera) of fungi belonged to ascomycetes (12 species), basidomycete (1 species) and deuteromycetes (6 species) were recorded. A maximum of 13 species was recorded from the month of April and a minimum of 10 species was recorded during the months of August and December. *Halosarpheia* represented by more number of species (3 species) than *Halosphaeria* (2 species). All other genera included by one species each. *Lignincola longirostris* was the most common species in Sellimunai and was contributed 50.75% of the samples. *Halosarpheia marina* (34.25%), *Halocyphina villosa* (40.75%), *Coniothyrium obiones* (40.25%) and *Humicola* sp. (28%) were frequently recorded. *Aniptodera chesapeakensis* (20%), *Halosarpheia abonnis* (19.5%), *Lophiostoma mangrovei* (13.25%), *Lulworthia grandispora* (10.5%) and *Periconia prolifica* (19%) were recorded as occasional and the remaining 9 species were rarely recorded (Table 5).

DISCUSSION

Mangrove swamps are one of the richest and most productive areas of organic detritus and form the base of the food chain. Marine fungi play an important role in nutrient regeneration cycles as decomposers of dead and decaying organic matter in the estuaries. Although mangroves are dominant feature of the Indian Coastline and provide niches and habitats for many marine organisms, very little is known about the fungi associated with them till recently.

Among the obligate marine fungi, ascomycetes were represented by more number of species than other groups of fungi as reported from mangrove wood (Ravikumar and Vittal, 1996; Aleem, 1980; Kohlmeyer, 1981), driftwood (Raghukumar, 1993; Prasannarai *et al.,* 1999; Prasannarai and Sridhar, 2003) and animal substrates (Ananda *et al.,* 1998). This is because of the fact that the ascomycetes posses enzyme producing ability and hence they could potentially colonize the lignocellulosic woody substrates. Garrett (1951) rightly placed them as a separate group called cellulosic fungi. In the present study also they were recorded from woody materials collected from the marine environment. Hence it could be concluded that these fungi are able to tolerate high salinity but also possess the enzyme producing mechanisms, and they could possibly be exploited for the production of extra cellular enzymes.

Among the fungal species identified up to species level, two species *viz.*, *Sphaerulina albispiculata* and *Cystosphora rhizophorae* (deuteromycetes) are reported for the first time in India. *Coniothyrium obiones* and *Phialophorophoma litoralis* (deuteromycetes) were first reported in India by Leenadevi (2002) from the driftwood collected from the Tamil Nadu coast. In the present investigation also these two species were isolated from the driftwood of Muthupet mangrove. Substrate availability and climate changes are the delimiting factors for the geographical distribution of fungi (Bebout *et al.,* 1987; Vrijmoed *et al.,* 1982), and it has been rightly suggested that the examination of more and more substrates is needed to understand the complete biodiversity status of marine fungi of India. Raghukumar (1996) pointed out that a thorough understanding of various niches occupied by marine fungi should be given newer thrust in the areas of Indian mycological research. In this context, the present investigation has brought out the new record on the distributional pattern of marine fungi in India, and also emphasizes the need of intensive investigation of marine fungi in relation to spatial, temporal and functional aspects.

The present investigation also deals with the pattern of distribution of different species of obligate marine fungi. The pattern of distribution has been categorized into common, frequent, occasional and rare. *Halosarpheia marina, Halocyphina villosa* and *Lignincola longirostris* have been categorized as common, *Aniptoder chesapeakensis, H. abonnis, Cirrenalia macrocephala, L. mangrovei, Periconia prolifica, Humicola* sp., *Phialophorophoma litoralis* as frequent, *D. enalia, Didymosphaeria* sp., *S. alibispiculata, Payosphaeria* sp. as occasional and *Lulworthia* sp., *H. quatricornuta, Halosarpheia* sp., *H. kanaloanus, Cystosphora rhizophorae* as rare. In similar such study Prasannarai *et al.* (1999) reported *Arerariomyces trifurcates* as common fungi in the intertidal wood samples of West coast of India, and Jones *et al.* (1988) recorded *Masssarina velatospora, Savporyella lignincola, Zalerion varium* and *Rosellinia* as common species from Philippines. Hence it could be concluded that there is no uniformity in the marine fungal species diversity and their distribution pattern in different geographical region. They are dependent on the native of the substrate and temporal regimes that favour the colonization, growth and substrate possession of the fungi. However, the species diversity observed in the present study (23 species) was comparable with the study made by Prasannarai and Sridhar (1997), who reported 24 species of fungi from driftwood collected along West coast of India.

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