

MANGLICOLOUS FUNGI FROM INDIA

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ABSTRACT

This paper deals with nine Ascomycetous fungi viz. *Rhizophila marina* Hyde et Jones, *Trematosphaeria striatispora* Hyde, *Lineolata rhizophorae* (Kohlm. et Kohlm.) Kohlm. et. Volkm.-Kohlm., *Caryospora rhizophorae* Kohlm., *Passeriniella savoryellopsis* Hyde et. Mouzouras, *Hypoxylon oceanicum* Scott Schatz, *Belizeana tuberculata* Kohlm. et. Volkm.-Kohlm., *Swampomyces armeniacus* Kohlm. et. Volkm.-Kohlm. and *Hydronectria tehys* Kohlm. et. Kohlm. var. *glabra* Kohlm. recorded for the first time from submerged parts of mangroves in India.

Key-words : marine , mangrove, fungi.

Number of new species of marine fungi from mangroves have been reported in recent years (Kohlmeyer and Kohlmeyer, 1979; Kohlmeyer, 1984, 1985; Kohlmeyer and Volkmann-Kohlmeyer, 1987, 1990; Hyde, 1988; Hyde and Jones, 1989; Hyde and Mouzouras, 1988; Scott Schatz, 1988). However, little is known about their occurrence on mangroves in India. Nine species of fungi collected from mangroves along the west coast of India and Andaman and Nicobar Islands, which are new records to India, are described and illustrated in this paper. All the specimen are deposited in the Herbarium collections at the National Institute of Oceanography.

Observations

Rhizophila marina Hyde et. Jones.

Mycotaxon (1989). 34:527-533.

Ascocarps: 500 to 900 μm in diameter, 450-750 μm in height, globose to subglobose, completely immersed, ostiolate, papillate, periphysate, dark brown to black, solitary. Neck: 450-500 μm in length, 100-500 μm in diameter. Asci: 70-100 μm long, 15-25 μm in diameter, 8 spored, 2-3 seriate, clavate, pedunculate, unitunicate, thin walled without apical apparatus. Ascospores: 20-28 μm x 7-9 μm , ellipsoidal to fusiform, one celled, yellowish to yellowish brown.

Collected on *Rhizophora mucronata* from Kundapura, Karnataka, India (August 1990 Herb. No: SCR 93, 94).

Trematosphaeria striatispora Hyde

Botanical Journal of the Linnean Society (1988). 98:135-150.

Ascocarps: black, 350-500 μm in diameter, 170-350 μm in height, subglobose, conical, ostiolate, papillate, solitary. Neck: 180-350 μm in length, 50-75 μm in diameter. Asci: 96-175 μm long, 12-20 μm in diameter, 8 spored, cylindrical, pedunculate, bitunicate, thick walled with ocular chamber. Ascospores: 30-35 x 6-10 μm , two seriate at the apex and one seriate at the base, fusiform, 3 (-5) septate, slightly constricted at the septum. Central cell larger, brown, end cells smaller, light brown to yellow, striate, surrounded by an indistinct gelatinous sheath.

Collected on *Nypa fruticans* (Thunb.) Womb. from intertidal region at Great Nicobar Island, India (March 1990, Herb. No: SCR 82).

Lineolata rhizophorae (Kohlm. et. Kohlm.) Kohlm. et. Volkm.-Kohlm.

Mycological Research (1990). **94**: 685-690.

Ascocarps: 300-450 μm in height, 200-250 μm in diameter, obpyriform, partly immersed, ostiolate, papillate. Neck: 60-90 μm in diameter at the apex and increasing towards the base. Periphyses: present, 1.5-2.5 μm in diameter, septate, simple. Pseudoparaphyses: 1-1.5 μm in diameter, septate, simple. Asci: 150-170 x 15-18 μm , 8 spored, cylindrical, short pedunculate, bitunicate, thick walled. Ascospores: 23-31 x 9-11 μm , uniseriate, ellipsoidal, one septate, slightly constricted at the septum, dark brown, striate by delicate costae.

Collected on *Rhizophora mucronata* Lamk. from intertidal regions of Great Nicobar Island, India (March 1990, Herb. No: SCR 52).

Caryosporella rhizophorae Kohlm.

Proceedings of the Indian Academy of Sciences (Plant Science) (1985). **94**: 355-361.

Ascocarps: 100-1050 μm in height, 800-1200 μm in diameter, gregarious, subglobose, carbonaceous, thick walled, black, superficial, ostiolate, ostiolar canal 70-100 μm in diameter. Peridium 90-150 μm in thickness. Pseudoparaphyses: 2-5 μm in diameter, branched, inconspicuously septate. Asci: 210-250 x 16-18 μm , 8 spored, cylindrical, long pedunculate, bitunicate, thick walled. Ascospores 25-30 x 10.12 μm , ellipsoidal, one septate, slightly constricted at the septum, dark brown, indistinctly verruculose.

Collected on *Rhizophora mucronata* Lamk. from intertidal regions of Mayabandar, Katchal and Nan-cowry Islands, India (March 1990, Herb. No: SCR 62, 63, 64, 65).

Belizeana tuberculata Kohlm. et. Volkm.-Kohlm.

Botanica Marina (1987). **36**: 195-204.

Ascocarps: 206-250 μm in height, 226-250 μm in diameter, subglobose, partially immersed, ostiolate, black and carbonaceous above, light brown on the sides, ostiolar canal filled with a tissue of hyaline cells. Pseudoparaphyses: 2 μm in diameter, simple, rarely branched. Asci: 140-150 x 25-29 μm , 8 spored, cylindrical, short pedunculate, thick walled, fuscitunicate, without apical apparatus, with a small ocular chamber. Ascospores: 17-24 x



Fig. 1. *Rhizophila marina* : ascus-1200 X (A), ascospore-1200 X (B).
Trematosphaeria striatispora : ascus-400 X (C), Ascospore-4000 XD.
Hydronectria telhys var *glabra* ascospore-1200 X (E) Lineolta
 rhizophorae : ascus-400 X (F), ascospore-1200 X (G). *Hypoxylon*
occanicum : ascus-400 X (H), ascospore-1200 X (I). *Caryospora*
rhizophorae : ascocarp-160 X (J), ascospore-1200 X (K).

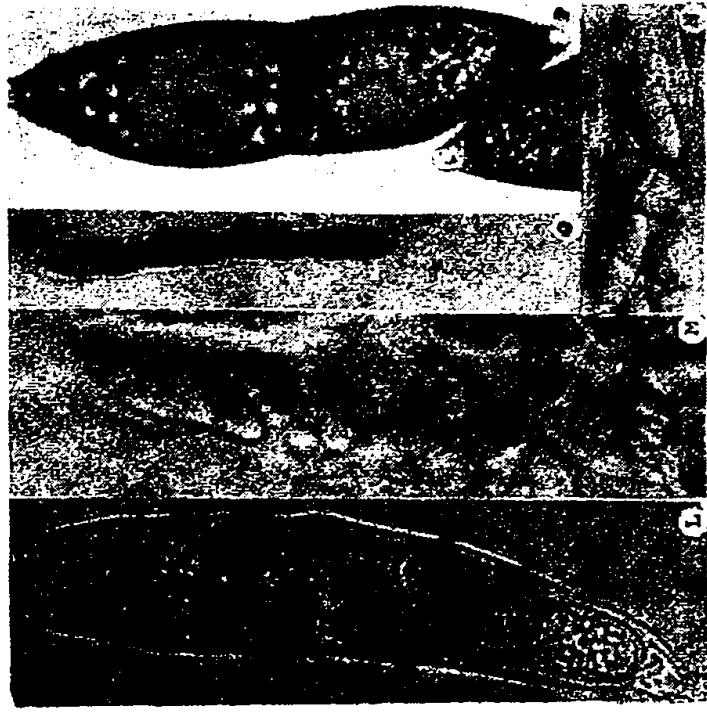


Fig. 2. *Belizeana tuberculata* : ascus-1200 X (L). *Swampomyces*
armeniacus : ascus-1200 X (M), ascospore-1200 X (N).
Passeriniella savorvellopsi : ascus-400 X (O) as
 cospore-1200 X (P).

10-15 μm , broad, ellipsoidal, one septate, constricted at the septum, hyaline, thick walled, double layered, mature spores with tuberculate ornamentation in between the two layers.

Collected on *Rhizophora mucronata* Lamk. from intertidal regions of Great Nicobar Island and Vandoor Marine Park, India, (March 1990, Herb. No: SCR 70, 72).

Swampomyces armeniacus Kohlm. et. Volkm.-Kohlm.

Botanica Marina (1987). 30: 195-204.

Ascocarps: 370-450 μm in height, 260-350 μm in diameter, subglobose, immersed, ostiolate, periphysate, light brown, ostiolar canal 40-65 μm in diameter, conical, filled with 2-3 μm thick periphyses. Clypeus: 45-100 μm thick, black, surrounding ostiole. Paraphyses: 1.3-1.5 μm thick, simple, rarely branched. Asci: 100-130 x 13-18 μm , 8 spored, cylindrical, short pedunculate, persistent unitunicate. Ascospores: 13-19 x 6-8 μm , broad, ellipsoidal, one septate, not constricted at the septum, hyaline to yellowish, smooth.

Collected on *Rhizophora mucronata* Lamk, *Avicennia marina* from intertidal regions of Vandoor Marine Park, Great Nicobar Island, Katchal Island, Little Andaman Island and Nan-cowry Island, India (March 1990, Herb. No: SCR 75, 76, 77).

Passeriniella savoryellopsis Hyde et. Mouzouras

Transactions of British Mycological Society (1988). 91: 179- 185.

Ascocarps: 500-750 μm in height, 800-1300 μm in diameter, globose to subglobose, immersed, solitary or gregarious, dark brown to black, ostiolate. Neck: 300-600 μm long, 200-350 μm in diameter with periphyses. Pseudoparaphyses: 4-6 μm in diameter, numerous, filamentous, branched, hyaline. Asci: 280-440 x 24-35 μm , 4 spored, cylindrical, pedunculate, thick walled, bitunicate, with an ocular chamber. Ascospores: 64-80 x 24-30 μm , uniseriate, ellipsoidal, three septate, slightly constricted at the central septum, central cell brown, large, end cells small, conical and hyaline,

Collected on *Rhizophora mucronata* Lamk. from intertidal regions of Great Nicobar Island, India (March 1990, Herb. No: SCR 80).

Hypoxylon oceanicum Scott Schatz

Mycotaxon (1988). 33: 413-416.

Ascocarps: 320-400 μm in height, 450-500 μm in diameter, subglobose, ostiolate, paraphyses persistent, broad, 2-2.5 μm in diameter. Asci: 8 spored, cylindrical, stipulate, with apical ring, 110-175 x 12-22 μm . Ascospores: brown to black, one celled, 18-23 x 7-12 μm , subglobose to broadly elliptic, rounded ends with a germ slit.

Collected on *Excoecaria agallocha*, *Rhizophora mucronata*, *Avicennia officinalis* and *Aegiceras corniculatum* from intertidal regions of Great Nicobar Island, Vandoor Marine Park, Little Andaman Island, Car Nicobar Island, Kundapura (Karnataka), Chora Island

(Goa), India (March 1990, Herb. No: SCR 40, 41, 42, 43. May 1990, Herb. No: SCR 44. October 1990, Herb. No: 45.)

Hydronectria tethys Kohlm. et. Kohlm. Var. *glabra* Kohlm.

Marine Ecology (1984). 5: 329-378.

Ascocarps 270-350 μm in height, 315-450 μm in diameter, subglobose, partially immersed, orange yellowish. Asci: 90-116 X 15-23 μm , 8 spored, short pedunculate, unitunicate, thin walled at maturity. Ascospores: 17-25 x 8.5-13 μm , one or biseriate ellipsoidal, one septate somewhat below the centre, slightly constricted at the septum, hyaline, smooth.

Collected on *Avicennia marina* from intertidal regions of Great Nicobar Island, India (March 1990, Herb. No: SCR 53)

ACKNOWLEDGEMENTS

The authors are thankful to the Director, National Institute of Oceanography and Head, Biological Oceanography Division for facilities provided; Mr. D.R. Ravikumar and Dr. B.P.R. Vittal, C.A.S. in Botany, University of Madras for help in identification; Miss Medha Joshi for secretarial help and DOEn for financial assistance.

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