

Biodiversity of Foliar Mycobionts of Myristica Swamps of Kerala - A Critically Endangered Ecosystem of Western Ghats

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The present study deals with the systematic and extensive survey of foliar mycobionts of Myristica swamps of Kerala from 2014-2016. It is a highly endangered and fragmented ecosystem. Most swamps are presumably extinct due to human impacts of various kinds. Many floristic studies have been conducted in these swamps. But, the foliar fungal studies are lacking here. Though these are obligate parasites, in many instances, they leave no mark of their existence on the host surface after removal of the colonies. Therefore, a better understanding of biology of these fungi is greatly needed. Hence all attempts have been made to record the foliar fungal wealth of the Myristica swamps.

The study resulted in the documentation of 31 different foliar fungal species belonging to 10 fungal genera, representing *Asteridiella*-2, *Asterina*-4, *Balladynocallia*-1, *Echidnodella*-1, *Hansfordiellopsis*-1, *Meliola*-16, *Phyllachora*-1, *Puccinia*-1, *Spiropes*-3, *Teratosperma*-1. The species under the genus *Asteridiella* are represented by *Asteridiella combreti* (Stev.) Hansf. var. *leonensis* Hansf., *Asteridiella malloti* (Hansf. & Thirum.) Hansf., the genus *Asterina* was represented by *Asterina flacourtiacearum* Hosag. & Ravikumar, *Asterina knemae-attenuatae*

Hosag. *et. al*, *Asterina vbhosagoudarii* Archana sp. nov, *Asterina sgcollegensis* Archana sp. nov, *Balladynocallia* was represented by *Balladynocallia glabra* (Hansf.) Bat., *Echidnodella* was represented by *Echidnodella bilgiensis* Archana sp. nov, *Hansfordiellopsis* was represented by *Hansfordiellopsis lichenicola* (Batista & Maia) Deight., *Meliola* was represented by *Meliola allophyli-concanici* Hosag., *Meliola beilschmiediae* Yamam. var. *cinnamomicola* Hosag., *Meliola bicornis* Wint., *Meliola canthii* Hansf., *Meliola capensis* (Kalch. & Cooke) Theiss. var. *malayensis* Hansf., *Meliola capensis* (Kalch., & Cooke) Theiss. var. *schleicherae* Hosag. & Pillai, *Meliola cymbopogonis* Kapoor, *Meliola desmodii-triquetri* Hosag. & Manoj., *Meliola flemingiicola* Hosag. *et. al*, *Meliola hemidesmicola* Hosag., *Meliola indica* Sydow var. *careyae* Stev., *Meliola laxa* Gaill. var. *indica* Hosag. *et.al*, *Meliola linderæ* Yamam., *Meliola litsea* Sydow var. *keralensis* Hosag., *Meliola memecyli* Sydow & Sydow, *Meliola strebli* Hosag., H. Biju & A. Manojkumar, *Phyllachora* was represented by *Phyllachora prataprajii* Hosag., *Puccinia* represented by *Puccinia thwaitesii* Berk, *Spiropes* represented by *Spiropes dorycarpus* (Mont.) M.B.Ellis, *Spiropes guareicola* (Stev.) Cif., *Spiropes japonicus* (P. Henn.) M.B. Ellis and *Teratosperma* represented by *Teratosperma anacardii* Hansf. The highest number of fungi belonged to the genera *Meliola*.

The host plants belonged to 17 families namely Acanthaceae-1, Combretaceae-1, Euphorbiaceae-3, Fabaceae-3, Flacourtiaceae-1, Lauraceae-3, Lecythidaceae-1, Melastomataceae-1, Menispermaceae-1, Moraceae-2, Myristicaceae-2, Myrtaceae-1, Periplocaceae-1, Poaceae-1, Polygalaceae-1, Rubiaceae-2 and Sapindaceae-6. The highest number of host plants belonged to the family Sapindaceae.

The present study resulted in the discovery of three new foliar fungal species namely *Asterina sgcollegensis* sp.nov., *Asterina vbhosagoudarii* sp.nov. and *Echidnodella bilgiensis*

sp.nov. from the Myristica swamps of Kerala. The collections were identified and deposited in the St.Gregorios College Herbarium (SGCH), Kottarakara.

During the study it has been noted that the area represents less ground vegetation, has become accessible to all biotic interference and has lead to relic vegetation. If the indigenous species are not regenerated, probably this vegetation will be conserved only in the form of photographs. In general, foliicolous fungi usually infect the indigenous plants of that particular region. But in absence of their native host plants, they may switch over to closely related introduced or cultivated plants. An analysis of the geographical distribution of foliicolous fungi on a worldwide basis reveals that about half of their numbers known from India are endemic. Species richness of a region is very important in assessing the biodiversity and the development of the nation. The valuable organisms with their identity, source of occurrence and their properties will be of immense use to mankind. Conservation of the genetic diversity of species is to conserve the plants in their natural habitat. Therefore, it is very important to conserve its natural habitat.

The present study will provide baseline data for subsequent works on host parasite interaction, ecology, life history studies, harmful effect on endemic endangered and threatened taxa, molecular taxonomy, gene mapping, etc. Phytochemical analysis of the infected plants may reveal several compounds, which may take prime role in the human welfare. Encouragement in the survey work in the tropical regions will enrich the knowledge on the biodiversity along with the wealth of the region.

**SIGNATURE OF PRINCIPAL
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