



KERALA FOREST RESEARCH INSTITUTE

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Rattans of India

Taxonomy, Biology and Utilization

Editors

C. Renuka, K.V. Bhat and R.C. Pandalai



Kerala Forest Research Institute
Peechi - 680 653, Thrissur, Kerala, India

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Kerala Forest Research Institute

An Institution of the Kerala State Council for Science, Technology and Environment (KSCSTE)

Peechi 680 653, Thrissur, Kerala, India.

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PREFACE

Our forests abound in many useful plant species that provide for human comfort and livelihood. Rattans, the climbing palms of tropical forests, can be regarded as one such group of plants which have been in use for many centuries for diverse wickerwork and handicrafts. The resource has been a means of income for thousands of forest dwellers, craftsmen and traders. However, rattan manufacture and export picked up momentum only during the latter half of 20th century due to the growing popularity of its products in Asian and European markets. This has led to indiscriminate exploitation and depletion of rattan resources from their natural habitats in South and Southeast Asian countries and attempts to replenish the resources have been only nominal.

Rattans are climbing palms which belong to the subfamily Calamoideae under the family Arecaceae (Palmae). The mature stems yield the canes that are utilized for a variety of furniture, basketry and handicraft items. Being a lignocellulosic material like wood, rattans also have certain inherent limitations with respect to their durability, susceptibility to fungal discolouration and weathering. However, in recent years, processing technology for rattans has considerably improved and techniques for treatment, processing and finishing have been developed which have enabled substantial value addition of rattan products.

Due to the depletion of rattan resources and the shortage of raw material experienced, the rattan industry in South and Southeast Asian countries is already facing a setback. Uncertainty in availability of raw material has been the main impediment for the industry. To overcome the shortage, some countries have already taken to establishment of rattan plantations which is a welcome sign for the development of rattan sector. Besides scarcity of raw material, lack of a well developed trading network has been a handicap for the rattan sector in many Southeast Asian countries.

It is time to realise that attempts are required to rise to the occasion and give thought to conserving the rattan resources which has been one of the valuable non-timber forest resource in the region. In this regard, it is necessary to create awareness of the importance of resource among the forestry personnel, scientific community, NGO's, industrialists, traders and other individuals, policy-makers and governments. The present book which is a team effort by Dr. C. Renuka and her group from KFRI, is an attempt in this line which will go a long way in achieving the objective.



Dr. K. V. Sankaran
Director

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KFRI Handbook No 26



RUST FUNGI OF KERALA



C. MOHANAN

RUST FUNGI OF KERALA

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Forest Pathology Department



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Preface

Information on rust fungi affecting the vegetation in various forest ecosystems in Kerala is meager. Most of the available information on rust fungi in this region was generated during 1940s and 1950s by the pioneering researchers like Prof. T.S. Ramakrishnan which forms the knowledge base of this important group of obligatory fungi. During 1980s, I have studied the rust fungi causing diseases in teak (*Tectona grandis*), rosewood (*Dalbergia latifolia*) and *Bombax ceiba*, in forest nurseries and plantations in the State as part of a systematic disease survey. Recently, during the course of a biodiversity inventory on plant pathogenic fungi in the Kerala part of the Western Ghats, a few more rust fungi were collected from different forest ecosystems. However, an interaction with Dr. Yasuyuki Hiratsuka, world authority on rust fungi, at an International Congress in 2007 inspired me to embark upon a detailed study of rust fungi in this region. Representative forest areas in the State were systematically surveyed and quite a large number of rust fungi associated with host plants in different forest ecosystems *viz.*, evergreen, semievergreen, shola forests, moist-deciduous and deciduous forests, forest nurseries and plantations were encountered. A total of 95 species of rust fungi belonging to 25 genera associated with 117 host species belonging to 80 host genera under 43 host families were collected and studied. Of these, 15 are hitherto undescribed taxa. The recent taxonomic concept of rust fungi has been followed and taxa have been rearranged and described. I express my gratitude to Dr. K.V. Sankaran, Director, KFRI for encouragement to carry out the study through financial support from KFRI Plan Grants. I express my sincere gratitude to Dr. N. Sasidharan, Scientist F, KFRI and Dr. P. Sujanalal for identification/confirmation of the identity of the host plants. Help rendered by the field staff of the Kerala Forest Department is also acknowledged. Technical support rendered by Smt. K. B. Anila for processing the specimens is also gratefully acknowledged. I hope this volume will be useful to students, teachers and researchers in plant pathology/ mycology and fungal biodiversity.

With immense pleasure and gratitude I wish to dedicate this volume to Dr. Jyoti Kumar Sharma, Professor, School of Environment and Natural Resources, Doon University, my former colleague, research guide and former Director of KFRI who did pioneering work on poplar rust in the 1970s.

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