

THE FLORA OF KERALA

Volume 1



BOTANICAL SURVEY OF INDIA

Flora of India
Series 2

THE FLORA OF KERALA

VOLUME 1

RANUNCULACEAE - CONNARACEAE

Edited by
P. Daniel

With assistance from

G.V.S. Murthy

&

P. Venu



भारतीय वनस्पति सर्वेक्षण
BOTANICAL SURVEY OF INDIA

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The Flora of Kerala
Volume 1
Ranunculaceae - Connaraceae

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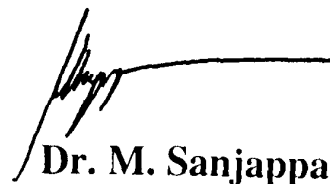
FOREWORD

The State of Kerala is known for its rich biological and cultural heritage as well as natural scenic beauty. The cultural practices in the state are driven by an agrarian lifestyle, with the agricultural practices being a culmination of long years of cultivation of a wide variety of crop plants, including coconut, cashew, spices, etc. The state is also rich in wild relatives of crop plants, which have a genetic potential of immense value. The name of the state itself is an eponym, derived from the Sanskrit word 'Keram' meaning coconut. Thus it is most appropriate that the use of natural resources of the state forms the mainstay of its economic development.

The state forms part of the Western Ghats 'hotspot' region – one of the twenty five globally recognised 'hotspot' areas that are designated so by virtue of their rich biodiversity and endemism. The state is endowed with dense tropical rainforests, which harbour unique flora and fauna, including microbial diversity that is typical of such rich tropical rainforests. Deforestation stemming from developmental activities is a major threat to all the 'hotspot' areas of the world. This global scenario and threat perception is also true for the W. Ghats 'hotspot' region. Considering that comprehensive information of natural resources is prerequisite for sustainable management of these resources and comprehensive developmental planning, it is a matter of pride that the Botanical Survey of India in accordance with its mandated work is bringing out a series of publications documenting the plant diversity of the country as a whole as well as such important 'hotspot'/sensitive ecosystem areas in particular.

The present volume of the *Flora of Kerala*, being the first of a planned trilogy, inventorying the plant diversity of state is timely and would be most useful to foresters, resource managers, and policy makers and planners alike for management of natural resources of the state as well as policy formulation for conservation and sustainable utilisation. I congratulate the scientists of BSI, Southern Circle, Coimbatore, on their commendable efforts for bringing out this important publication.

Place : Kolkata
Date : 23.11.2005



Dr. M. Sanjappa
Director, Botanical Survey of India

PREFACE

The work on the flora of Kerala, one of the species-rich states in the country, began soon after the publication of volume 3 of the *Flora of Tamil Nadu: Analysis* (1989). Though it became a little slack as the first three volumes of the *Flora of India* got priority, it got an impetus soon after the publication of the said volumes in 1993. However, due to constraints particularly lack of manpower since a number of personnel involved in the work superannuated and posts remained vacant, quite a few families especially those that were not there in the first three volumes of the *Flora of India* remained unfinished, it had to prolong. After the present director Dr. M. Sanjappa took over the administration he made it clear that the flora of Kerala is a committed project and that the publication of volume 1 was overdue. In the interregnum of more than a decade enormous amount of water had flowed under the bridge in the form of vast literature with new taxa, new records and above all new floras, some of them containing a number of endemic species. All these had to be incorporated in the revised format. The work had to be resumed with vigour for finishing the unfinished and incomplete families and incorporating all additional information. Despite the vigour it has taken inordinately long time, more than a year, to complete.

The present volume has the families Ranunculaceae to Connaraceae with 59 of them 265 genera, 687 species including few novelties. In the taxonomic citations a reference is given to all pertinent old floras as well as recent ones from Kerala. Since Rama Rao's *Flowering plants of Travancore* (1914) is just a list it is cited only when he indicates a precise locality or the species in question was recorded by later workers for the erstwhile Travancore. A reference to Rheede's *Hortus Malabaricus* is dispensed with and Nicolson & al.'s (1988) interpretation is invariably referred to. Despite the best efforts the desired consistency could not be achieved since some authors took liberty. Almost invariably the names of authors, titles of books and journals are abbreviated following *Authors of plant names* (Brummitt & Powell, 1992), *Taxonomic literature* ed. 2 and *B-(otanic)-P-(eriodic)-H(untianum)* respectively. The distribution in Kerala is based on published literature, holdings in herbaria particularly MH and unpublished reports/theses submitted under district flora projects funded by the Botanical Survey of India/by fellows worked in the Botanical Survey of India. Admittedly there might be many lapses. We are sure that learning lessons from this volume an improved and much better volume 2 will appear soon.

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We are thankful to Dr. M. Sanjappa, Director, Botanical Survey of India, Kolkata, for encouragement, to Dr. D.H. Nicolson (US), for continued generous help with literature and expertise in solving nomenclatural problems whenever cropped up, to Drs. H.J. Noltie (E) and J.K. Sharma (Director, KFRI, Thrissur), for help with literature, to our former colleagues Dr. V.J. Nair and Shri. N.C. Rathakrishnan, for help in various ways, to fellow-taxonomists and botanists, Drs. Z. Abraham (NBPGR, Thrissur), N. Anil Kumar and M.K.R. Narayanan (MSSRF, Wynad), R. Ansari (MBG, Kozhikode), V. Chelladurai (SPSU, Palayamkottai), P. Dayanandan (MCC, Tambaram), V.S. Ramachandran (KASC, Coimbatore), R. Ganesan (ATREE, Bangalore), D. Narasimhan (MCC, Tambaram), A.K. Pradeep (CALI), T.J.S. Rajakumar (SJC, Palayamkottai), G.R. Rao, (IISc, Bangalore), N. Sasidharan (KFRI, Thrissur), C. Sathish Kumar (TBGRI, Thiruvananthapuram), P.G. Diwakar (BSI, Port Blair) and foresters and biodiversity managers, S/Shri. V. Ramakantha IFS (Principal, SFSC, Coimbatore), V. Ganesan IFS (Wildlife Warden, Indira Gandhi Wildlife Sanctuary & National Park, Pollachi) and S. Thangaraj Paneerselvam (Range Officer, Topslip) and our colleague Dr. R. Gopalan, for the photographs, to Shri. J.H. Franklin Benjamin and W. Dinesh Albertson, JRFs, Dr. C. Murugan, PDF, Miss M. Reema Kumari, SRF, Dr. K. Sasikala, Tech. Asst. and Miss R. Sumathi (SRF, BSI, Port Blair), for help in various ways and to late N.G.R. Nair, Stenographer, for typing and correcting the whole manuscript with commitment. We are obliged to express a special word of appreciation to Shri. W. Arisdason, JRF, for his invaluable help throughout.

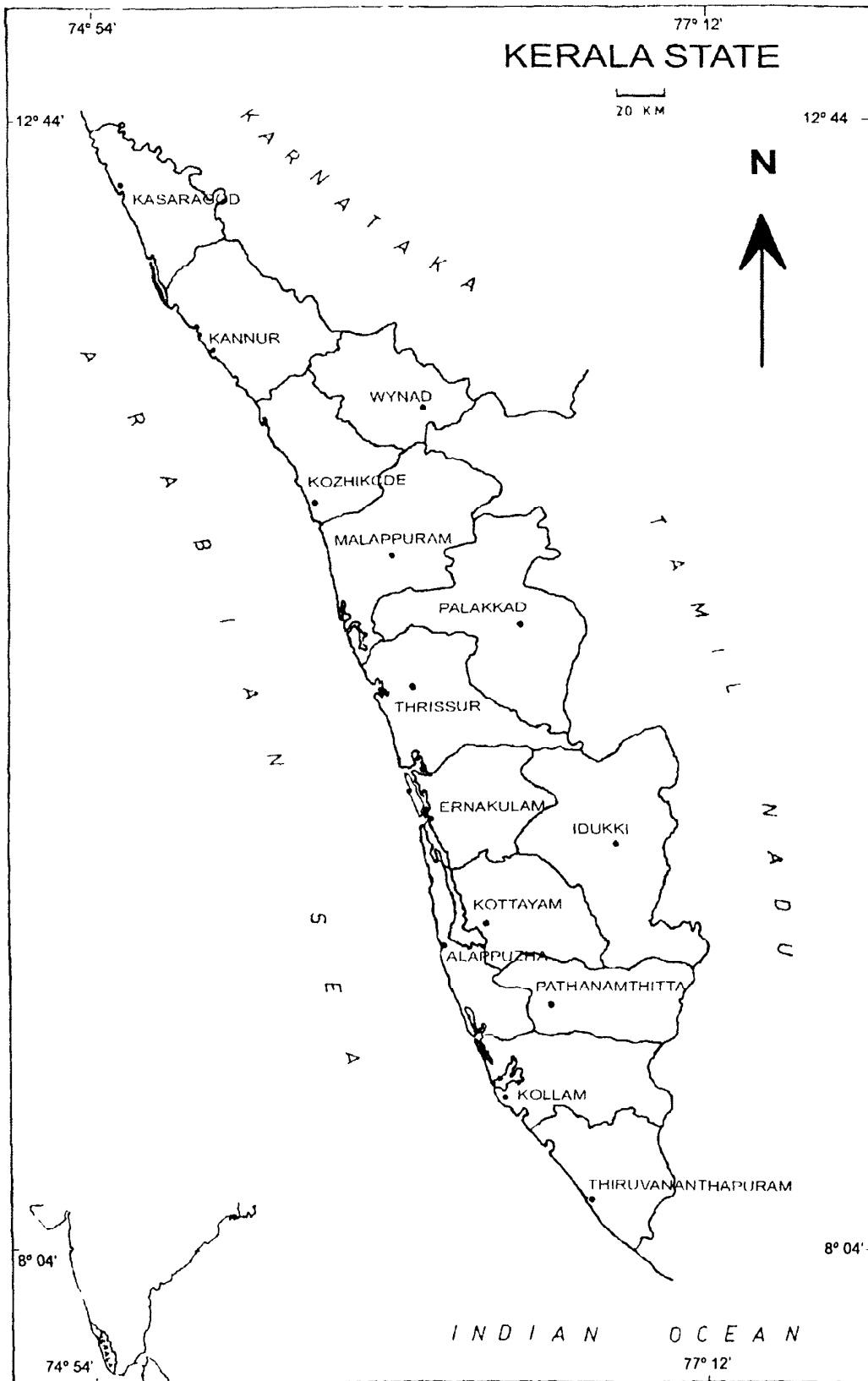
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Anaimudi - the tallest peak in South India

D. Narasimhan



Silent Valley

V. Ramakantha



Sholas

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Sholas in Idukki

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A Myristica swamp in Kollam

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Conversion of forests for plantations

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Sageraea grandiflora Dunn

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Calophyllum calaba L.

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Mesua ferrea L.



S. T'raj Panneerselvam



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Poeciloneuron pauciflorum Bedd.

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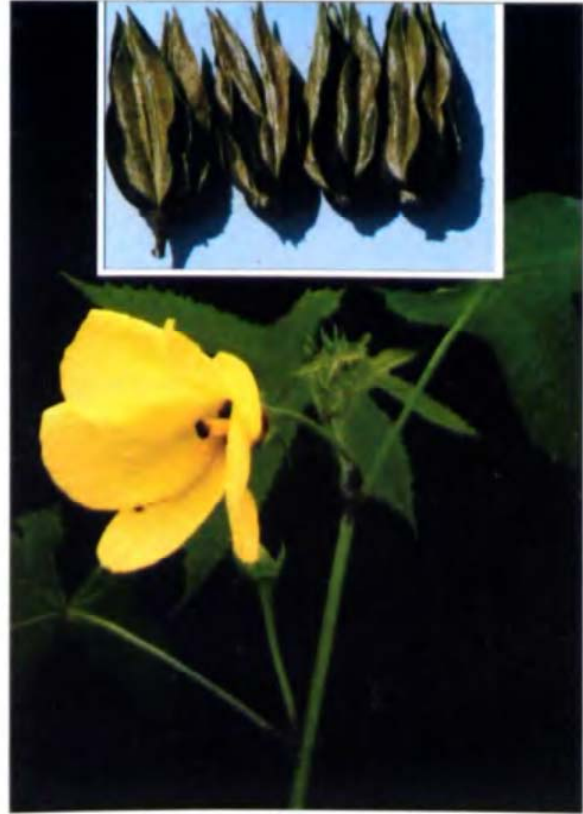


Vateria indica L.

V. Chelladurai



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Cullenia exarillata A. Robyns

S. T'raj Panneerselvam



***Kydia calycina* Roxb.**

R. Ganesan



***Helicteres isora* L.**

R. Gopalan, R. Ganesan



***Firmiana colorata* (Roxb.) R. Br.**

R. Ganesan



Heritiera littoralis Dryand.

R. Ganesan



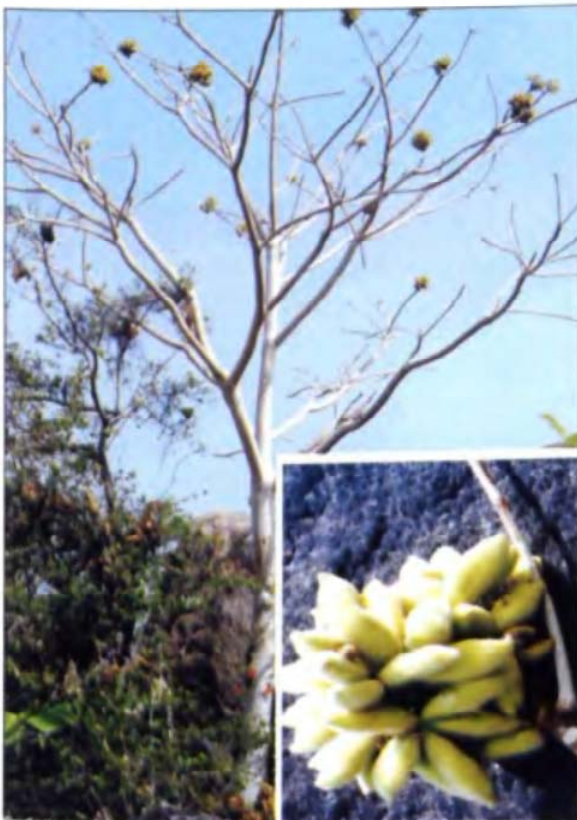
Heritiera papilio Bedd.

R. Ganesan



***Sterculia guttata* Roxb. ex DC.**

G.R. Rao



***Sterculia urens* Roxb.**

S. T'raj Panneerselvam



***Elaeocarpus tuberculatus* Roxb.**

S. T'raj Panneerselvam



***Grewia tiliifolia* Vahl**

R. Ganesan, P.S. Sivaprasad



***Elaeocarpus munroii* (Wight) Mast.**

R. Ganesan



Elaeocarpus serratus L.

P.S. Sivaprasad, R. Ganesan



Elaeocarpus venustus Bedd.

R. Ganesan



Hugonia belli Sedgw.

A.K. Pradeep



Hugonia mystax L.

A.K. Pradeep



Geranium nepalense Sweet

R. Gopalan



Hydrocera triflora (L.) Wight & Arn.

M. Thiyagarajan



Biophytum reinwardtii (Zucc.) Klotzsch.

E.S.S. Kumar



Impatiens acaulis Arn.

R. Gopalan



***Impatiens auriculata* Wight**

S. Suseendran



***Impatiens campanulata* Wight**

S. T'raj Panneerselvam



***Impatiens jerdoniae* Wight**

S. T'raj Panneerselvam



***Impatiens flaccida* Arn.**
S. T'raj Panneerselvam



***Impatiens diversifolia* Wall. ex Wight
& Arn.** S. T'raj Panneerselvam



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Impatiens grandis B. Heyne ex Wall.

N. Sasidharan



Impatiens henslowiana Arn.

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S. T'raj Panneerselvam



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S. T'raj Panneerselvam



***Impatiens parasitica* Bedd.**

N. Anilkumar



Impatiens inconspicua Benth. ex Wight & Arn.
S. T'raj Panneerselvam



Impatiens tomentosa B. Heyne ex Wight & Arn.
S. T'raj Panneerselvam



Impatiens scapiflora B. Heyne ex Roxb.

S. T'raj Panneerselvam