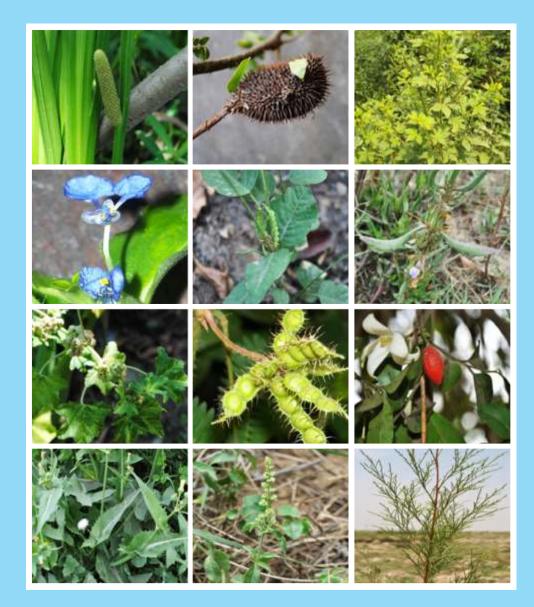
# The Journal of the Indian Botanical Society



Volume 94 (1 & 2) 2015



Chief Editor Y. Vimala

Associate Editors ALKA SRIVASTAVA R.K, SHARMA

ISSN - 0019 - 4468 www.indianbotsoc.org

# THE INDIAN BOTANICAL SOCIETY

(Founded in 1920) Registration No. 5446/1927-28 Renewal No. 3913-2010-2011/1-683 (Registered under Act XXI of 1860) EXECUTIVE COUNCIL FOR 2015

PRESIDENT IMMEDIATE PAST PRESIDENT VICE PRESIDENT SECRETARY TREASURER CHIEF EDITOR HON. LIBRARIAN Prof. T. PULLAIAH Prof. P.C. TRIVEDI Prof. N.N. TRIPATHI Prof. V.P. SINGH Dr. ALOK SRIVASTAVA Prof. Y. VIMALA Prof. A.K. RAI

## COUNCILLORS

Prof. S.V.S. CHAUHAN, Agra (U.P.) Prof. N.K. DUBEY, Varanasi (U.P.) Prof. M.P. TRIVEDI, Patna (Bihar) Prof. MEENU SARAF, Ahmadabad (Guj.) Prof. R.C. VERMA, Ujjain (M.P.) Prof. SHASHI SHARMA, Shimla (H.P.) Prof. S.R. YADAV, Kolhapur (MH) Prof. JAGAN MOHAN REDDY, Warangal (A.P.) Prof. V.N. PANDEY, Gorakhpur (U.P.) Prof. RAJESH TANDON, Delhi Prof. JYOTI KUMAR, Ranchi (Jharkhand) Dr. KISHORE S. RAJPUT, Vadodara (Guj.) Prof. REKHA BHADAURIA, Gwalior (M.P.) Dr. VIDYA PATNI, Jaipur (Raj) Prof. AMRITESH SHUKLA, Mizoram Prof. J.I.S. KHATTAR, Patiyala (Punjab)

EDITORIAL BOARD

Chief Editor Associate Editors Prof. Y. VIMALA Prof. ALKA SRIVASTAVA Dr. R. K. SHARMA, Hapur (U.P.)

## SECTIONAL EDITORS

Prof. C. Manoharachari (Hyderaba) Prof. Kailash Agarwal (Jaipur) Prof. D.K. Maheshwari (Haridwar) Dr. Virendra Nath (Lucknow) Prof. Pushpa Srivastava (Jaipur) Dr. D.K. Upreti (Lucknow) Prof. A.K. Pandey (Delhi) Prof. S.K. Chaturvedi (Bilaspur) Prof. M. Iqbal (Delhi) Prof. A.K. Jain (Gwalior) Prof. Seshu Lavania (Lucknow) Prof. R. D Gaur (Rishikesh) Pfor. R.H. Shete (Mumbai) Prof. A.K. Srivastava (Meerut) Dr. U.C. Lavania (Lucknow) Dr. J.L. Karihaloo (Delhi) Prof. R.S. Tripathi (Lucknow) Prof. S.B. Agarwal (BHU) Dr. D.K. Sharma (New Delhi) Prof. Shanti Swaroop Sharma (Shimla) Prof. O.P. Saxena (Ahmedabad) Prof. D.R. Batish Chandigarh) Prof. Y.K. Bansal (Jabalpur) Prof. Padma Kumar (Jaipur) Dr. G. Tejovathi (Gwalior) Prof. M. Anis (AMU, Aligarh)

The Society was founded with the objective of promoting the study of Botany in India and to provide a common platform to botanists from all over the country. Members are entitled to all privileges provided by the Society. The Journal of IBS is on our website, available to all the online registered members. The membership fee, fixed by the Executive Committee is to be sent to the Treasurer, Prof. Alok Srivastava, Dept. of Botany, M.J.P. Rohilkhand University, Bareilly. Indian Botanical Society by means of a DD drawn in his favour. The seretary and other office bearers can be contacted for any further information. The official website www.indianbotsoc.org is operational from 2011.

Picture on Cover Page from page no. 98



## **GUIDELINES FOR THE CONTRIBUTORS**

The Journal of the Indian Botanical Society welcomes original research papers including short communications and critical scientific reviews highlighting present status and an overview of the past work on topics of current interest. All the authors of an article must be active members of the Indian Botanical society.

**Submission of the manuscript:** The manuscript should be sent as hard (printed) copy in duplicate alongwith a soft (electronic version) copy (virus-free CD), in proper protective mailing cover, to Prof. Y. Vimala, Chief Editor, JIBS, Department of Botany, C.C.S. University, Meerut (U.P.)-250004, or through email : editorjibs@gmail.com (telephone (off.): 0121-2762021 extn.2112). A declaration that (a) all authors are members (b) the paper contains unpublished data in the related field of research, and (C) there is no conflict of interest, should be sent along with the paper. If accepted, a hard copy of accepted/revised manuscript with CD should be submitted to the Chief Editor. For all correspondence, MS No. provided by the Chief Editor will be required.

**Format of the manuscript:** The manuscript should be typed in double space, Times New Roman, 12 -font size, on one side of A-4 size paper with one inch margin on all sides. The electronic version of text and figures should be in MS Office, photographs should be in JPG or JPEG format. Original text, figures, line diagrams (on good quality tracing paper), black and white or coloured photographs must be submitted.

Title of the paper should be short and in all capital letters, bold (14 font size) centered near the top of the first page.

Author's (s') name(s) should be in bold, all capitals (12 font size) and affiliations in title case in italics.

**Arrangement of the text** should be—Abstract, Introduction, Materials and Methods, Observations/Results, Discussion and Conclusion, Acknowledgement and References. All these subheadings should be in upper case (capital letters) and sub-subheadings in title case. Abstract should be in 9-font size, as brief as possible, followed by keywords (maximum 5) arranged in alphabetic order and separated by comma, followed by a short running title.

**Illustrations:** Figures should be numbered consecutively using Arabic numerals. Line diagrams and inscriptions should be legible keeping in mind they may be reduced. Labelling should also be properly stenciled. Legends of the figures should be typed on a separate sheet, should be brief and self explanatory. Please write on the back of figures, the title of your paper and the name(s) of author(s) with pencil.

Tables should also be numbered consecutively using Arabic numerals (Table-1, 2...) with a self – explanatory title. Abbreviations should be explained in foot notes, otherwise standard abbreviations should be used, e.g.: ml (milliliter), g (gram), l (liter), kDa (kilo Dalton), kb (kilo base) and symbols e.g.: , ,  $\mu$ , etc. All Latin binomial names should be italicized.

**References** should be arranged in alphabetical order in the following style:

### Journal:

Singh D, Chauhan SVS and Kinoshita T 1989 Effect of some gametocides on pollen sterility and anther development in cotton (*Gossypium arboreum*). *J Fac Agric Hokkaido Uni Japan* **64** 75-80.

#### Book:

Raghavan V 1997 *Developmental Biology of Flowering Plants*. Springer-Verlag, New York **Proceedings:** 

Sahu PK and Sahu TR 2005 Threat assessment as per IUCN. In: *National symposium on emerging technologies and their Application in Assessment, conservation, management of threatened wild medicinal plants and their habitat.* Pp 7-8. **Chapter of a book:** 

Cross JW and Schulz PL 1997 Chemical induction of male sterility. In: *Pollen Biotechnology for Crop Production and Improvement*, eds. Shivanna KR and Sawhney VK Cambridge University Press, London. Pp 218-236. Please avoid the reference of Ph.D. thesis as far as possible.

In the **text**, references should appear as Cross and Schulz (1997) or (Cross and Schulz 1997). A comma should be placed between two references, within the same parenthesis, after the year. All papers are reviewed by members of Editorial Board or external referees. The comments of referees/ editors are communicated to the authors for revision and incorporation of suggestions, before the paper is finally accepted by the Chief Editor.

After acceptance, the corresponding author will be sent a **galley proof** of paper which should be carefully checked and **returned to the Chief Editor** within a week of receipt, otherwise the paper will be published in the next issue. Manuscript, **not accepted** for publication, **will not be returned**, unless specially requested.

Hard copy of reprints will not be provided. Authors will be entitled to get a pdf of their paper, which will be uploaded on www.indianbotsoc.org. Authors will be required to pay (printing) pagination charge of Rs. 200/- per black and white printed page and an extra Rs. 2000/- per coloured plate, if desired, at the time of sending the corrected galley proofs. The DD be prepared in favour of Business Manager, IBS, payable at Meerut or through NEFT to A/c 50001191116, IFSC: ALLA0210144.

Book Review: Two copies of the book (non-refundable) will have to be submitted to the Chief Editor.

#### Advertisements and Business Affairs:

Please write to Dr. Alka Srivastava, Associate Editor, Dept of Botany, University of Lucknow, Lucknow-226007. **Note:** 

Acceptance of manuscripts for publication in JIBS shall automatically mean transfer of copyright to JIBS. JIBS shall not be responsible for authenticity of the data, results and conclusions drawn by the authors.

The Journal of the Indian Botanical Society

Volume 94 (1&2) 2015

www. Indianbotsoc.org	ISSN 0019-4468
CONTENTS	
Flora of Telangana – The 29th State of India <b>T. Pullaiah</b>	1-8
The Changing Paradigm of Angiosperm Systematics: Symbiosis of Morphology and Molecules Arun K. Pandey	9-22
Effect of Growth Regulators and Elicitors for the Enhanced Production of Solasodine in Hairy Roc Solanum melongena (L.) Amita Jain and Saumya Singh	ot Culture of 23-39
Frequently Encountered Morpho-species of <i>Oscillatoria</i> Vaucher (cyanoprokaryota) From India Sarika Kesarwani, Richa Tandon and G.L. Tiwari	40-51
Distributional Pattern of Cyanobacteria in Rice Fields of Manipur, India Thingujam Indrama, Gunapati Oinam, Oinam Avijeet, Laxmipriya Koijam Sharma, Subhalaxmi Aribam, Keithellakpam Ojit , G.D. Sharma and O. N. Tiwari	52-6.
Leaf Architectural Studies in Some Cucurbitaceae S. Raja Shanmukha Rao and S. Srinivas Rao	64-72
Folk Medicinal Plants in Ghaziabad District of Western Uttar Pradesh, India Shalu Chaudhary and Ravinder Kumar	73-8
Effect of Ultraviolet-B Radiation on Growth and Pigments of <i>Chlorella vulgaris</i> Rekha Sharma and Vijendra K. Sharma	81-8
Isolation of Callus Lines of <i>Celosia cristata</i> L. with Variation in Betalain Content Mrunal I. Warhade and Rupesh S. Badere	89-9
Ethnomedicinal Plants of the District Bijnor (U.P.) India Shalu Chaudhary and Ravinder Kumar	97-10
Variation in Density and its Relation to the Distribution, Frequency and Percentage of Tissues in Bamboo Culms, <i>Dendrocalamus strictus</i> Nees <b>R. Santhoshkumar and K. V. Bhat</b>	104-11
Emerging Role of Co-Inoculation of <i>Pseudomonas</i> with Cyanobacteria for Increasing Crop Product Ankita Khemka and Meenu Saraf	tivity 111-11
An Efficient Protocol for Micropropagation of a Medicinal Plant <i>Aloe vera</i> L. Through Organ Cultu Anupam Kumari and Md Naseem	ure 118-12
Bioefficacy of Plant Extracts in the Control of Root Rot Disease of Sponge Gourd Nupur Sadda and Rashmi Varma	126-13
Assessment of Sediment Trace Element Concentrations in Aruvikkara Reservoir Using Geo- Accumulation Index, Enrichment Factor and Contamination Factor <b>K. Shibu Krishnan and K. G. Ajit Kumar</b>	131-13
Contribution to the Knowledge of Fresh Water Red Algae (Rhodophyta) of India M.R. Suseela and Kiran Toppo	136-14
Assessment of Trophic State of a Reservoir Using Different Algal Indices K. Shibu Krishnan and K.G. Ajit Kumar	141-14
Macroscopic and Microscopic Evaluation of <i>Carica papaya</i> L. Leaves With Reference to Sexual D <b>Deepa Verma and Meenakshi Vaidya</b>	imorphism 145-14
Local Survey of <i>Hydrilla verticillata</i> (L.F.) Royle : An Invasive and Valuable Aquatic Weed <b>Hem Kant Jha, Bijay Shankar Singh and Anil Kr Varshney</b>	149-15