

Contents

Contributors	ix
Abbreviations	xiii
PART I: PLANT BIODIVERSITY – AN OVERVIEW	
1 New Challenges to Promote Botany's Practice Using Botanic Gardens: The Case Study of the Lisbon Botanic Garden <i>Maria Amélia Martins-Loução and Gisela Gaio-Oliveira</i>	1
2 New Horizons in Diversification of Temperate Fruit Crops <i>Mohammad Maqbool Mir, Umar Iqbal, Sheikh Mehraj, Shabir Ahmad Mir, Munib ur Rehman, Shafat Ahmad Banday and Ghulam Hasan Rather</i>	18
3 Asteraceae of India: its Diversity and Phytogeographical Affinity <i>Sunit Mitra and Sobhan Kumar Mukherjee</i>	36
4 Maintenance of Plant Species Diversity in Forest Ecosystems <i>Kathryn E. Barry and Stefan A. Schnitzer</i>	71
PART II: PLANT BIODIVERSITY AND ETHNOBOTANY	
5 Plant Diversity of the Drylands in Southeastern Anatolia-Turkey: Role in Human Health and Food Security <i>Munir Ozturk, Volkan Altay, Salih Gucel and Ernaz Altundag</i>	83
6 Observations on Some Ethnomedicinal Plants of Jharkhand <i>Sanjeev Kumar</i>	125
PART III: PLANT BIODIVERSITY AND BIOCHEMICAL PARAMETERS	
7 Plant Diversity: Envisioning Untold Nanofactories for Biogenic Synthesis of Nanoparticles and their Applications <i>Syed Baker, K.S. Kavitha, P. Azmath, D. Rakshith, B.P. Harini and S. Satish</i>	133
8 Plant Diversity Repertoire of Bioactive Triterpenoids <i>K.S. Kavitha, Syed Baker, D. Rakshith, P. Azmath, B.P. Harini, and S. Satish</i>	152
PART IV: PLANT BIODIVERSITY AND CLIMATIC FACTORS	
9 Roles of Secondary Metabolites in Protection and Distribution of Terrestrial Plants under Climatic Stresses <i>Asma Hammami-Semmar and Nabil Semmar</i>	170

- 10 Summer Semi-deciduous Species of the Mediterranean Landscape: A Winning Strategy of *Cistus* Species to Face the Predicted Changes of the Mediterranean Climate 195
Otilia Correia and Lia Ascensão

PART V: PLANT BIODIVERSITY AND ENVIRONMENTAL STUDIES

- 11 Aquatic Plant Biodiversity: A Biological Indicator for the Monitoring and Assessment of Water Quality 218
Abid Ali Ansari, Shalini Saggu, Sulaiman Mohammad Al-Ghanim, Zabid Khorshid Abbas, Sarvajeet Singh Gill, Fareed A. Khan, Mudasir Irfan Dar, Mohd Irfan Naikoo and Akeel A. Khan
- 12 Gymnosperm Diversity of the Kashmir Himalayas 228
Mohd Irfan Naikoo, Mudasir Irfan Dar, Fareed Ahmad Khan, Abid Ali Ansari, Farha Rehman and Fouzia Nousheen

PART VI: CROSS TALK BETWEEN PLANT AND MICROBIAL BIODIVERSITY

- 13 Diversity of Plant Parasitic Nematodes in Pulses 239
Tarique Hassan Askary
- 14 The Influence of Soil Microbes on Plant Diversity 275
Mohammad Mobin
- 15 Plant-associated Endophytic Plethora as an Emerging Source of Antimicrobials 282
Syed Baker, P. Azmath, H.C. Yashavantha Rao, D. Rakshith, K.S. Kavitha and S. Satish

PART VII: PLANT BIODIVERSITY: MONITORING AND ASSESSMENT

- 16 Biodiversity, Bioindicators and Biogeography of Freshwater Algae 295
Martin T. Dokulil
- 17 Quantitative Description of Upper Storey Vegetation at a Foothill Forest in Indian Eastern Himalayas 309
Gopal Shukla, Nazir A. Pala, Saikat Gantait and Sumit Chakravarty
- 18 Significance of Permanent Sample Plots (PSPs) Established in Different Forest Ecosystems in Monitoring Ecological Attributes and Conservation of Biodiversity: A Review 317
Jyoti K. Sharma
- 19 Effects of Harvesting Plans on Tree Species Diversity: An Evaluation of Two Logged Forest Compartments 341
Saiful Islam
- 20 Diversity of Angiospermic Flora of West Bengal, India 350
Sunit Mitra and Sobhan K. Mukherjee
- 21 Status of Invasive Plants in Tamil Nadu, India: Their Impact and Significance 371
S.M. Sundarapandian and K. Subashree
- 22 Patterns of Plant Endemism and Forest Regeneration Processes in Northern Western Ghats 388
Pundarikakshudu Tetali and Sujata Tetali

23	DNA Barcoding as a Molecular Tool for the Assessment of Plant Biodiversity <i>Subrata Trivedi, Abid Ali Ansari, Hasibur Rehman, Shalini Saggu, Zahid Khorshid Abbas and Sankar K. Ghosh</i>	419
PART VIII: PLANT BIODIVERSITY: CONSERVATION		
24	Onion and Related Taxa: Ecogeographical Distribution and Genetic Resources in the Indian Subcontinent <i>Anjula Pandey, K. Pradheep and K.S. Negi</i>	429
25	Traditional Ecological Knowledge and Plant Biodiversity Conservation in a European Transfrontier Landscape <i>José Antonio González, Ana Maria Carvalho and Francisco Amich</i>	443
26	Cryoconservation Methods for Extended Storage of Plant Genetic Resources <i>Saikat Gantait, Uma Rani Sinniah, Gopal Shukla and Narayan Chandra Sahu</i>	458
27	Interspecific Chemical Differentiation within the Genus <i>Astragalus</i> (Fabaceae) Based on Sequential Variability of Saponin Structures <i>Abir Sarraj-Laabidi and Nabil Semmar</i>	465
28	Implementing Traditional Ecological Knowledge in Conservation Efforts <i>Meg Trau, Robin Owings and Nishanta Rajakaruna</i>	525
29	Conserving Forest Biodiversity <i>Petros Ganatsas</i>	536
30	Invasive Alien Weed Species: A Threat to Plant Biodiversity <i>Disha Jaggi, Mayank Varun, Saurabh Pagare, Niraj Tripathi, Meenal Rathore, Raghwendra Singh and Bhumesh Kumar</i>	564
	Index	593