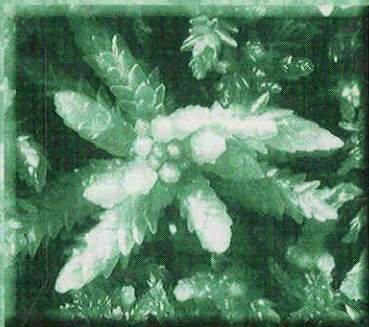


Functional Plant Ecology

Second Edition



edited by
Francisco I. Pugnaire
Fernando Valladares



CRC Press
Taylor & Francis Group

Table of Contents

Preface	xiii
Editors	xv
Contributors	xvii
Chapter 1 Methods in Comparative Functional Ecology	1
<i>Carlos M. Duarte</i>	
Chapter 2 Opportunistic Growth and Desiccation Tolerance: The Ecological Success of Poikilohydrous Autotrophs.....	7
<i>Ludger Kappen and Fernando Valladares</i>	
Chapter 3 Ecological Significance of Inherent Variation in Relative Growth Rate and Its Components	67
<i>Hendrik Poorter and Eric Garnier</i>	
Chapter 4 The Architecture of Plant Crowns: From Design Rules to Light Capture and Performance	101
<i>Fernando Valladares and Ülo Niinemets</i>	
Chapter 5 Structure and Function of Root Systems.....	151
<i>Robert B. Jackson, William T. Pockman, William A. Hoffmann, Timothy M. Bleby, and Cristina Armas</i>	
Chapter 6 Water Relations and Hydraulic Architecture.....	175
<i>Melvin T. Tyree</i>	
Chapter 7 Responses of Plants to Heterogeneous Light Environments.....	213
<i>Robert W. Pearcy</i>	
Chapter 8 Acquisition, Use, and Loss of Nutrients	259
<i>Frank Berendse, Hans de Kroon, and Wim G. Braakhekke</i>	
Chapter 9 Functional Attributes in Mediterranean-Type Ecosystems.....	285
<i>Richard Joffre, Serge Rambal, and Claire Damesin</i>	

Chapter 10	Tropical Forests: Diversity and Function of Dominant Life-Forms.....	313
	<i>Ernesto Medina</i>	
Chapter 11	Plant Diversity in Tropical Forests	351
	<i>S. Joseph Wright</i>	
Chapter 12	Arctic Ecology.....	369
	<i>Sarah E. Hobbie</i>	
Chapter 13	Plant Life in Antarctica.....	389
	<i>T.G. Allan Green, Burkhard Schroeter, and Leopoldo G. Sancho</i>	
Chapter 14	Facilitation in Plant Communities	435
	<i>Ragan M. Callaway and Francisco I. Pugnaire</i>	
Chapter 15	Plant Interactions: Competition	457
	<i>Heather L. Reynolds and Tara K. Rajaniemi</i>	
Chapter 16	Plant–Herbivore Interaction: Beyond a Binary Vision.....	481
	<i>Elena Baraza, Regino Zamora, José A. Hódar, and José M. Gómez</i>	
Chapter 17	Ecology of Plant Reproduction: Mating Systems and Pollination.....	515
	<i>Anna Traveset and Anna Jakobsson</i>	
Chapter 18	Seed and Seedling Ecology.....	549
	<i>Kaoru Kitajima</i>	
Chapter 19	Biodiversity and Interactions in the Rhizosphere: Effects on Ecosystem Functioning	581
	<i>Susana Rodríguez-Echeverría, Sofia R. Costa, and Helena Freitas</i>	
Chapter 20	Resistance to Air Pollutants: From Cell to Community	601
	<i>Jeremy Barnes, Alan Davison, Luis Balaguer, and Esteban Manrique-Reol</i>	
Chapter 21	Canopy Photosynthesis Modeling	627
	<i>Wolfram Beyschlag and Ronald J. Ryel</i>	
Chapter 22	Ecological Applications of Remote Sensing at Multiple Scales	655
	<i>John A. Gamon, Hong-Lie Qiu, and Arturo Sanchez-Azofeifa</i>	
Chapter 23	Generalization in Functional Plant Ecology: The Species-Sampling Problem, Plant Ecology Strategy Schemes, and Phylogeny	685
	<i>Mark Westoby</i>	
Index		705