

Contents

	<i>List of Contributors</i>	<i>page x</i>
	<i>Acknowledgements</i>	<i>xv</i>
1	Introduction: Wilting Leaves and Rotting Branches – Reconciling Evolutionary Perspectives on Senescence	1
	Richard P. Shefferson, Owen R. Jones and Roberto Salguero-Gómez	
	Part I Theory of Senescence	21
2	The Disposable Soma Theory: Origins and Evolution	23
	Thomas B. L. Kirkwood	
3	A Hamiltonian Demography of Life History	40
	Michael R. Rose, Lee F. Greer, Kevin H. Phung, Grant A. Rutledge, Mark A. Phillips, Christian N. K. Anderson and Laurence D. Mueller	
4	Senescence, Selection Gradients and Mortality	56
	Hal Caswell and Esther Shyu	
5	Taxonomic Diversity, Complexity and the Evolution of Senescence	83
	Alan A. Cohen	
	Part II Senescence in Animals	103
6	Evolutionary Demography of the Human Mortality Profile	105
	Oskar Burger	
7	Senescence in Mammalian Life History Traits	126
	Jean-Michel Gaillard, Michael Garratt and Jean-François Lemaître	
8	Avian Escape Artists? Patterns, Processes and Costs of Senescence in Wild Birds	156
	Sandra Bouwhuis and Oscar Vedder	

viii	Contents	
9	The Evolution of Senescence in Nature	175
	Andrew I. Furness and David N. Reznick	
10	Explaining Extraordinary Life Spans: The Proximate and Ultimate Causes of Differential Life Span in Social Insects	198
	Eric Lucas and Laurent Keller	
11	Senescence in Modular Animals: Botryllid Ascidiars as a Unique Ageing System	220
	Baruch Rinkevich	
12	<i>Hydra</i>: Evolutionary and Biological Mechanisms for Non-Senescence	238
	Ralf Schaible, Felix Ringelhan, Boris H. Kramer and Alexander Scheuerlein	
	Part III Senescence in Plants	255
13	Physiological and Biochemical Processes Related to Ageing and Senescence in Plants	257
	Maurizio Mencuccini and Sergi Munné-Bosch	
14	The Evolution of Senescence in Annual Plants: The Importance of Phenology and the Potential for Plasticity	284
	Liana T. Burghardt and C. Jessica E. Metcalf	
15	Demographic Senescence in Herbaceous Plants	303
	Johan P. Dahlgren and Deborah A. Roach	
16	Complex Life Histories and Senescence in Plants: Avenues to Escape Age-Related Decline?	320
	Jennifer Gremer, Satu Ramula, Bård Pedersen, Elizabeth Crone, Peter Lesica, Anne Jäkäläniemi and Juha Tuomi	
	Part IV Senescence in Microbes	339
17	Why Some Fungi Senesce and Others Do Not: An Evolutionary Perspective on Fungal Senescence	341
	Marc F. P. M. Maas, Alfons J. M. Debets, Bas J. Zwaan and Anne D. van Diepeningen	
18	Yeast Ageing: Reproduction Strategies Determine the Longevity of Budding and Fission Yeasts	362
	Tomasz Bilinski and Renata Zadrag-Tecza	
19	Organismal Senescence in Plant–Fungal Symbioses	381
	Richard P. Shefferson and Charles C. Cowden	

Cambridge University Press

978-1-107-07850-5 — The Evolution of Senescence in the Tree of Life

Edited by Richard P. Shefferson, Owen R. Jones, Roberto Salguero-Gómez

Table of Contents

[More Information](#)

Contents ix

Part V	Senescence across the Tree of Life	401
20	Life History Trade-Offs Modulate the Speed of Senescence	403
	Roberto Salguero-Gómez and Owen R. Jones	
	<i>Index</i>	422