

Contents

Part I Modelization of Evolution

- | | | |
|----------|---|-----------|
| 1 | Rate of Adaptation of Large Populations | 3 |
| | Feng Yu and Alison Etheridge | |
| 2 | A Phylogenetic Mixture Model for Heterotachy | 29 |
| | Andrew Meade and Mark Pagel | |

Part II Concepts in Evolutionary Biology

- | | | |
|----------|---|-----------|
| 3 | Accelerated Evolution of Genes of Recent Origin | 45 |
| | Macarena Toll-Riera, Jose Castresana, and M. Mar Albà | |
| 4 | Life-Cycle Features of Tumour Cells | 61 |
| | Jekaterina Erenpreisa and Mark S. Cragg | |
| 5 | General Evolutionary Regularities of Organic and Social Life | 73 |
| | Valeria I. Mikhalevich | |
| 6 | Old and New Concepts in EvoDevo..... | 95 |
| | Margherita Rainieri | |

Part III Knowledge

- | | | |
|----------|--|------------|
| 7 | Overturning the Prejudices about Hydra and Metazoan Evolution .. | 117 |
| | Hiroshi Shimizu | |
| 8 | The Search for the Origin of Cnidarian Nematocysts
in Dinoflagellates | 135 |
| | Jung Shan Hwang, Satoshi Nagai, Shiho Hayakawa, Yasuharu Takaku,
and Takashi Gojobori | |

Part IV Applied Evolutionary Biology

9 A Possible Relationship Between the Phylogenetic Branch Lengths and the Chaetognath rRNA Paralog Gene Functionalities: Ubiquitous, Tissue-Specific or Pseudogenes	155
Roxane-Marie Barthélémy(✉), Michel Grino, Pierre Pontarotti, Jean-Paul Casanova, and Eric Faure	
10 Mode and Tempo of <i>matK</i>: Gene Evolution and Phylogenetic Implications	165
Khidir W. Hilu and Michelle M. Barthet	
11 Phylogeography and Conservation of the Rare South African Fruit Chafer <i>Ichneumon stobbiai</i> (Coleoptera: Scarabaeidae)	181
Ute Kryger and Clarke H. Scholtz	
12 Nothing in Medicine Makes Sense Except in the Light of Evolution: A Review	197
Bernard Swynghedauw	
13 An Overview of Evolutionary Biology Concepts for Functional Annotation: Advances and Challenges	209
Anthony Levasseur and Pierre Pontarotti	
Index	217