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978-0-521-49653-7 - Evolution and Speciation of Island Plants

Edited by Tod F. Stuessy and Mikio Ono

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Oceanic island archipelagos are profoundly interesting ecosystems in which to ask questions about evolutionary patterns and processes, and may rightly be considered as one of the best places on earth to seek an understanding of the origin and elaboration of biological diversity. This volume brings together contributions covering a range of important issues in contemporary oceanic island plant biology, focusing on patterns and processes in Pacific and other islands (with emphasis on the Bonin, Hawaiian and Juan Fernandez Islands) to provide a stimulating view of the current state of research and a possible agenda for future investigations. Topics addressed include chromosomal variation, macromolecular divergence, island biogeography theory, isolating mechanisms, modes of speciation and evolution of secondary plant products, resulting in a volume which reveals the special opportunities offered by oceanic archipelagos for investigating evolutionary phenomena in vascular plants.

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EVOLUTION AND
SPECIATION OF ISLAND
PLANTS

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Frontmatter

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This book is dedicated to Sherwin Carlquist, outstanding investigator of island plants whose works have stimulated numerous scientists (including both editors) to pursue studies in oceanic archipelagos

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Frontmatter

[More information](#)

Contents

<i>List of contributors</i>	page xi
<i>Preface</i>	xiii
<i>Acknowledgements</i>	xv
Part one: Hawaiian Islands	1
Introduction	
1 Chromosome evolution and speciation in Hawaiian flowering plants. <i>Gerald D. Carr</i>	5
2 Evolution in the endemic Hawaiian Compositae. <i>Bruce G. Baldwin</i>	49
Part two: Juan Fernandez Islands	75
Introduction	
3 Isolating mechanisms and modes of speciation in endemic angiosperms of the Juan Fernandez Islands. <i>Tod F. Stuessy, Daniel J. Crawford, Clodomiro Marticorena and Mario Silva O.</i>	79
4 <i>Dendroseris</i> (Asteraceae: Lactuceae) and <i>Robinsonia</i> (Asteraceae: Senecioneae) on the Juan Fernandez Islands: similarities and differences in biology and phylogeny. <i>Daniel J. Crawford, Tao Sang, Tod F. Stuessy, Seung-Chul Kim and Mario Silva O.</i>	97
5 Island biogeography of angiosperms of the Juan Fernandez archipelago. <i>Tod F. Stuessy, Daniel J. Crawford, Clodomiro Marticorena and Roberto Rodríguez</i>	121
Part three: Southern and western Pacific Islands	139
Introduction	
6 Genetic diversity of the endemic plants of Bonin (Ogasawara) Islands. <i>Motomi Ito, Akiko Soejima and Mikio Ono</i>	141

7	Evolution of cryptic dioecy in <i>Callicarpa</i> (Verbenaceae) on the Bonin Islands. <i>Nobumitsu Kawakubo</i>	155
8	Conservation of the endemic vascular plant species of the Bonin (Ogasawara) Islands. <i>Mikio Ono</i>	169
9	Preliminary observations on the evolution of endemic angiosperms of Ullung Island, Korea. <i>Byung-Yun Sun and Tod F. Stuessy</i>	181
10	Evolution in <i>Crossostylis</i> (Rhizophoraceae) on the South Pacific Islands. <i>Hiroaki Setoguchi, Hideaki Ohba and Hiroshi Tobe</i>	203
	Part four: General evolutionary patterns and processes on oceanic islands	231
	Introduction	
11	Secondary compounds and evolutionary relationships of island plants. <i>Bruce A. Bohm</i>	233
12	Chromosomal stasis during speciation in angiosperms of oceanic islands. <i>Tod F. Stuessy and Daniel J. Crawford</i>	307
13	The current status of our knowledge and suggested research protocols in island archipelagos. <i>Tod F. Stuessy and Mikio Ono</i>	325
	<i>Author index</i>	333
	<i>Taxon index</i>	340
	<i>Subject index</i>	353

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Frontmatter
[More information](#)

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Frontmatter
[More information](#)

xii

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Preface

Oceanic island archipelagos are profoundly interesting ecosystems in which to ask questions about evolutionary patterns and processes. Their isolation from other land masses restricts numbers of plausible hypotheses that can be advanced to explain evolutionary events, often resulting in stronger scientific inferences. Island archipelagos may rightly be considered one of the best places on earth to understand origins and elaborations of biological diversity.

In recent years, interest in the evolution of plants on oceanic islands has increased with work appearing on the Hawaiian Islands, the Canary Islands, Bonin Islands (Japan), Juan Fernandez Islands (Chile) and numerous additional archipelagos. It seemed pertinent and timely, therefore, to bring persons together with experience in these different island groups for a new view of island plant biology.

The present papers resulted from a symposium convened by the co-editors at the XV International Botanical Congress in Yokohama, Japan, August 1993. The response from that symposium was very positive and suggested that publication of the presentations (in modified and up-dated form) would be highly desirable. Cambridge University Press agreed to take on the project. In addition to papers from the symposium itself, which focused on Pacific archipelagos, several additional invited manuscripts were solicited to provide an even stronger and more comprehensive review of the status of studies of plant evolution on oceanic islands.

It is clear from the chapters of this book that oceanic archipelagos do offer special opportunities for investigating evolutionary phenomena in vascular plants. It is also clear that certain processes occur preferentially on islands in contrast to continental areas. As the concluding chapter outlines (Chapter 13), more rigorous approaches to solving these evolutionary problems are now recommended to help maximize insights. The

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Frontmatter
[More information](#)

xiv

Preface

results and discussions in this book clearly move us in the right direction, but neither are they the final word on any topic. The contents together, however, do emphasize the beauty, fascination and importance of plants of oceanic islands, and the general role they play in helping reveal origins and diversity of plant life in this biosphere.

*Tod F. Stuessy
Mikio Ono*

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Several financial sources made this book possible. Partial initial support from the organizing committee of the XV International Botanical Congress helped assure attendance by participants of the symposium. Additional funds were provided for individual contributors from local sources as acknowledged at the end of respective chapters. Financial aid for the editors to work together on editing manuscripts in Tokyo during June 1995 was provided by the Office of International Education, Ohio State University, and Tokyo Metropolitan University. Final editing of the book was made possible when the senior editor was Deputy Director for Research and Collections of the Natural History Museum, Los Angeles County, California, USA.