

book review

Plants and Islands revisited

The Biology of Island Floras, edited by David Bramwell & Juli Caujapé-Castells, 2011, Cambridge University Press, 522 pp. \$120 (hardback) ISBN: 978-0-521-11808-8; <http://www.cambridge.org>

In April 1977, David Bramwell, at the time recently appointed as director of the Canarian Botanical Garden *Viera y Clavijo* in Gran Canaria (Canaries, Spain), hosted a scientific meeting commemorating the 25th anniversary of the garden. Two years later this yielded an excellent book, appropriately entitled *Plants and Islands* (Bramwell, 1979), which became a classic reference on the state of knowledge on island evolution and conservation. It signalled the end of a golden age of island-themed books that began with Sherwin Carlquist's *Island Life* (1965), and included Robert MacArthur and Edward O. Wilson's *The Theory of Island Biogeography* (1967), Carlquist's *Island Biology* (1974) and David Lack's posthumous *Island Biology* (1976).

Thirty-two years later, close to his retirement, David Bramwell, together with the current Head of the Department of Molecular Biodiversity at the Botanical Garden, Juli Caujapé-Castells, have edited a new text. In it they revisit the scenario of island plants, but now in light of the geological, molecular and phylogeographic tools developed since the publication of the original *Plants and Islands* which have impressively enhanced our understanding of the biology of island floras.

The book encompasses 21 chapters written by 48 relevant authors (of these only two are survivors of *Plants and Islands*: David Bramwell and Vernon Heywood) plus a preface and subject index.

An introduction prepared by David Bramwell, in which the structure of the book is explained, is followed by two interesting generalist chapters. These reflect the development, over the last three decades, of the state of knowledge on "The reproductive biology of island plants" and "Spatial methodologies in historical biogeography of islands." In the former, Daniel Crawford et al. present an updated and easy-to-read synthesis, stressing the importance of comparing island plants with their continental relatives for under-

standing the changes in mating systems induced by the selective pressure existing on islands. In the latter, Paula Posadas and colleagues provide a simple and straightforward example-based explanation of the new possibilities that appear when phylogenetic data and spatial distribution techniques in biogeography are combined.

In the central part of the book, the present knowledge on the origin and evolution of the flora of the more important islands and archipelagos worldwide are given, including Hawai'i, Galápagos, the Caribbean islands, Madagascar, Socotra, Macaronesia, Pitcairn, New Zealand and New Caledonia.

From this part I would like to highlight the high level of all the contributions. Those of particular interest may include the highly informative "Origins and evolution of the Galápagos vascular plants" by Alan Tye & Javier Francisco-Ortega, and the chapters written by Juli Caujapé-Castells ("Jesters, red queen, boomerangs and surfers: a molecular outlook on the diversity of the Canarian endemic flora") and by Alain Vanderpoorten et al. ("Dispersal, diversity and evolution of the Macaronesian cryptogamic floras") in which an audacious interpretation of the role of Macaronesia, and hence of islands worldwide, as climate refugia for continental back-colonisation is supported.

Unfortunately the list of islands included is incomplete. Although a plethora of literature has been recently published in this respect, an up-to-date summary of present knowledge on the origin and evolutionary features of many islands and archipelagos that have contributed significantly to our understanding of insular floras is missing. Among them are the Mediterranean islands, Seychelles, Mascarenes, Juan Fernández, South Atlantic islands and French Polynesia.

The conservation-focused last part of the book, for me the less polished, includes several general chapters, such as "Invasive alien species

and islands”, “Climate change and island floras”, “Botanical gardens and the conservation of island floras” and “The hazardous future of island floras”. Within this part, an exception is Ole Hamann’s “Ecology, demography and conservation in the Galápagos islands flora”, an interesting ecology-based chapter with important conservation implications for the Galápagos.

Themes that I felt were missing in the book include a chapter clearly centred on the present conservation status of insular floras worldwide and its consequences for biodiversity loss, as well as an account of the on-going plant colonisation of Surtsey, whose 50th anniversary is going to be celebrated next year.

In summary, the book provides a group of interesting chapters, either general or focused on specific island groups, that is a significant contribution to summarising our present knowledge of the biology of island floras. It is without doubt a worthy successor of *Plants and Islands* and ‘a must’ for the bookshelf of any researcher focusing on island life.

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