

OCEANIC ISLANDS: INTRODUCTION

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Contents

- 1. Introduction
- 2. Classification of Islands
- Glossary
- Bibliography
- Biographical Sketch

1. Introduction

Islands are microcosms of nature at large and have provided tractable replicates for observing evolutionary and ecological processes. Consequently, they have contributed to ecological and biogeographical theory well beyond their proportional collective representation in the total land surface of the earth. They have also served as natural laboratories for more controlled assessment of ecological processes. The present treatise reviews the historical development of theories on insular ecology, biogeography, and community dynamics, and evaluates the main controversial issues in *Section History of Insular Ecology and Biogeography*. Then specific topics are treated in detail. *Sections Patterns of Species Richness, Endemism and Diversification in Oceanic Island Floras* and *Patterns of Geographical Distributions of Animals* respectively review the floras and faunas on the oceanic islands of the world and outlines how they differ from continental biotas. *Section Introduced Species and their Control* discusses the introductions of alien species to islands and the adverse effect this has had on insular communities. *Section Dispersal of Plants and Animals to Oceanic Islands* outlines the modes of dispersal of organisms to islands. Finally, *Section Conservation of Island Plant Populations and Communities* discusses the problems of conservation of insular biotas, especially plants, and presents recommendations for future action based on selected case studies.

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Biographical Sketch

Harold Heatwole received a Ph.D. in zoology from the University of Michigan in 1960, based on a thesis dealing with herpetology. His first academic appointment was at the University of Puerto Rico where he carried out a study of the herpetofauna of the islands of the Puerto Rican-Virgin Island archipelago. This stimulated an interest in insular biogeography and community ecology generally and he broadened his studies accordingly. Upon immigrating to Australia in 1966, he transferred his research interests to the islands of the Great Barrier Reef. He earned a second Ph.D., this time in botany, and from the University of Queensland with a dissertation on "Some Aspects of Phytogeography and Vegetation Dynamics of Islands of the Great Barrier Reef." His study of islands has also taken him to various Pacific localities, Indonesia, the small offshore islands of New Guinea and to most of the subantarctic islands. Of his total of 290 scientific publications, 52 deal with islands, including two books: *A Coral Island* and *Community Ecology of a Coral Cay*, the latter co-authored with T. Done and E. Cameron. He is currently a professor at North Carolina State University.