
REVIEWS

John L. Culliney, *Islands in a Far Sea: Nature and Man in Hawaii*. San Francisco: Sierra Club Books, 1988. Pp. xiv, 410, maps, figures, bibliography, index. US\$25.00.

Reviewed by Mark Merlin, University of Hawaii at Manoa

The ecology and evolutionary biology of the Hawaiian Islands have been recognized by scientists as extraordinarily interesting and valuable since Darwin's time. However, not since the appearance of Sherwin Carlquist's useful and widely read *Hawaii: A Natural History* (New York: Natural History Press, 1970; 2d ed., Lawai, Kauai: Pacific Tropical Botanical Garden, 1980) has anyone attempted to produce a single-volume, detailed survey on this broad, fascinating topic. Carlquist's landmark book focused primarily on terrestrial organisms and their habitats. An updated survey that included discussion of both the marine and land biota and ecosystems has long been needed.

The remote geographical isolation, environmental diversity, and relatively small habitat size help explain the remarkable and instructive degree of endemism, adaptive radiation, and adaptive shifts that characterize the native biota of Hawaii. Unfortunately, much of the rich and diverse endemic biota is lost forever or is severely threatened by a variety of human activities. Utilizing his extensive review of the literature and numerous personal communications with experts in various fields, Culliney has produced a sweeping survey of Hawaiian natural history. His "evocative" book celebrates the special natural heritage of Hawaii and chronicles the devastation that has occurred since humans first arrived in Hawaii. Culliney repeatedly emphasizes the importance of Hawaii as a living museum of biological adaptation and evolution in his examination of the many types of environments, from the deep

ocean surrounding Hawaii to the upper reaches of the high volcanic mountains. For each of the many Hawaiian marine and terrestrial ecosystems described, Culliney focuses on prominent species and key environmental variables, comparing them to related organisms or habitats elsewhere.

Islands in a Far Sea has a strong conservation theme and is aimed at an undergraduate audience. Both amateur and professional readers will benefit, however, from the wealth of information that the author has marshaled together here. For many, this comprehensive overview will serve as a thoughtful, challenging introduction into the unique natural history of Hawaii and the severe ecological changes and loss of biodiversity that humans have caused in the islands. For others, Culliney's opinionated commentary may seem unfair and perhaps inappropriate. Although by no means an objective treatise, this book informs the reader and challenges him or her to consider the consequences of human impact on the environment--both past and present.

Although this book is crammed with information derived from a broad archival investigation of nineteenth-century literature and an up-to-date, thorough review of relevant scientific journals, the referencing of sources is frustrating. Notes are grouped by chapter at the end of the text and one has to keep returning to the back of the book to determine where Culliney found his data or who shared their personal expertise on Hawaiian natural history with him. Even though the book is generally well edited, there are a few typographical mistakes. For example, the genus of large native tree ferns, *hapuu*, is misspelled as *Cybotium* on pages 199 and 340. There are also some informational errors. For example, Culliney refers to *pili* grass (*Heteropogon contortus*) as an "endemic species widely used for thatching houses" (p. 328). This important grass in prehistoric Hawaii is certainly not endemic, possibly not even native, to the Hawaiian Islands. Culliney might also have noted that this herbaceous species was used for mulching purposes, especially in the cultivation of the sweet potatoes. Hence, some prehistorians and ethnobotanists assume that fire was used to encourage an increase in the availability of this useful, perhaps indigenous, grass--at the expense of many endemic trees, shrubs, and other plants.

Another, more discouraging, problem in Culliney's book involves the quantity and quality of the illustrations. He does offer the disclaimer that "budgetary limitations and structural constraints" precluded the inclusion of sufficient figures that could have further enhanced the impact of this commendable survey. To his credit, Culliney refers the reader to a variety of other "sources" where adequate photographs and

line drawings of the native and alien plants and animals of Hawaii can be found. These are listed in his "Supplementary Sources for Illustrations" near the end of the book. Nevertheless, if there is to be a second edition, the author should try to convince his publisher that more and better illustrations will significantly increase the value of his splendid effort.

In spite of the reference and illustration problems, I strongly recommend this book to those who wish to learn more about the truly special natural history of Hawaii and the regrettable aspects of human use of land and water in the archipelago.