

## Book Reviews

**Darwin's Islands: A Natural History of the Galapagos**, by Ian Thornton. Natural History Press, New York, \$7.95.

The tourist industry has been growing rapidly in the Galapagos: in 1969 there were approximately 200 visitors, in 1973, up to 6,000 are expected. Scientific expeditions, too, have increased notably since the establishment in 1960 of the Charles Darwin Research Station on Santa Cruz Island. Yet Dr Thornton's book is the first attempt to provide the layman, the interested naturalist, and the professional scientist with an overview of and introduction to the natural history of this fascinating archipelago. On the whole, I think he has succeeded, and he has certainly done his homework. Most of the information comes directly from the scientific literature, but the writing is generally straightforward, lucid, and uncomplicated, with an extensive bibliography for each chapter.

After introductory chapters on the historical setting and a general description of the islands, separate chapters are devoted to sea birds, plants and insects, reptiles, giant tortoises, land birds, Darwin's finches, and native mammals. Unfortunately, marine biology is almost totally ignored, but this reflects the lack of studies. Three chapters discuss the special problems of dispersal, establishment and evolution on true oceanic islands as compared to continental islands and continents in general. The final chapter concerns the current threats, posed mainly by a variety of introduced mammals.

Though published in 1971, the book is up to date only until 1968. Also, being based largely on the scientific literature through 1969, it repeats most of the errors contained in that literature, most of which, except for a few groups of organisms (e.g. sea birds, Darwin's finches, some plant genera), is primarily anecdotal and full of misconceptions. This could have been avoided if the manuscript had been reviewed by the Darwin Station staff and/or by a few of the scientists who have recently completed extensive studies in the islands. The final chapter, in particular, suffers from the lack of review: the author is apparently unaware that since August 1968, an Ecuadorian Galapagos National Park Service has been in operation and that the efforts of this Service and the Darwin Station resulted in many positive conservation gains in 1969 and 1970. For example, widespread control programmes were established for many feral mammal populations and the islands' inhabitants have accepted these; most races of the giant tortoises can be and are being preserved by breeding, raising and restocking programmes; and tourism is being rather strictly controlled by the combined efforts of the Park Service, the Darwin Station, and the industry itself.

CRAIG MACFARLAND

**Flora of the Galapagos Islands**, by Ira L. Wiggins and Duncan M. Porter. Oxford University Press, £17.50.

Hitherto all botanists, and indeed all naturalists, visiting the Galapagos have felt acutely the need for some means of identifying the plants there. Now Dr Wiggins together with Dr Porter, who replaced the late Yale Dawson as co-author, have produced, as a by-product of the 1964 scientific expedition, a magnificent volume which amply supplies the need. Indeed the only criticism that could be made is that its 998 pages and 96 colour illustrations (from photographs) make it so heavy and bulky that it will be hard to pack into one's luggage for the next visit, let alone use it in the field.

After an introduction that covers general matters, such as physiography,

geology, climate, soil, vegetation zones, fauna and early history of the islands, a complete flora takes up the greater part of the book. Each species is treated as fully as one could wish, in the present state of knowledge, with keys to all the main groups, and ample line drawings and distribution maps. These maps are of extreme interest, if only in making clear the very limited knowledge we still have of the Galapagos flora. For only the main islands have been at all adequately explored, and even there only the more readily accessible portions. The field is clearly wide open for further exploration—almost anywhere off the main tourist tracks will serve—and with the aid of this book it should no longer be necessary to take specimens of even the commonest plants. Another point: since all the flora has immigrated at some time or other from the mainland, it is only to be expected that fresh plants will be continually arriving. Even in the few years since the field work for this book was completed, it is clear that some ruderal plants have spread more widely. So even in Academy and Wreck Bays, probably the best worked areas in the archipelago, new records can quite easily be made.

RICHARD FITTER

**The Mammals of Arabia, Vol. III, by David L. Harrison.** Ernest Benn, £15.

Dr Harrison is to be congratulated on this work culminating in this final volume to crown the whole. Few people have worked so hard, both in the field and at the bench, to collect the material and work out a book of this nature, yet one of his appendices, 'Addenda to Volumes I & II', shows how much still remains to be done: here are recorded the first specimen of a wild sheep to be discovered in the Arabian peninsula, and that since 1967, and the even more remarkable record of a lesser kudu, also unknown in Arabia, shot by an Arab in South Yemen in the same year; there is also some evidence that cheetahs still survive in the more remote areas. These three discoveries of what are obviously very rare animals show how urgent is the need for the protection of all.

They show too that Dr Harrison has laid a foundation on which others will build as the area becomes more accessible to naturalists, for whom this book will be an essential tool. This makes the more unpardonable the behaviour of the publishers in continuing, despite the criticisms of successive reviewers, to use the offset printing process and cartridge paper: the middle tones get lost and what could otherwise be useful photographs—e.g. of skulls and teeth—are not worth the paper they are printed on. One only has to compare the frontispiece of the newly discovered wild sheep with the same picture printed on the jacket on a coated paper to see what has been lost. As it is, the plates of skulls, etc. are of little use and the author would have been well advised to have discarded photography altogether and given us more of the admirable line drawings which are the most useful illustrations in all three volumes.

This last volume covers the lagomorphs and rodents and follows the layout of the earlier ones, dealing with both the taxonomy and natural history of each species. In some of the notes it is not always clear whether the author is referring to a species or a subspecies, as when he says (p 607) that the upper incisors of *Arvicola terrestris* are 'strikingly pro-odont' while the photograph on the opposite page is of a skull of *A. t. persicus* much less pro-odont than some species of that genus.

The three volumes will remain the standard text book on the mammals of Arabia for the next generation or so and will be as essential to the general naturalist as to the taxonomist. The price was high for the first two volumes,