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BOOK REVIEW

The Petrels. Their Ecology and Breeding Systems.

John Warham. 1990. Academic Press.
440 pp., numerous photographic illustrations and line drawings etc., 250 × 170 mm, rrp. \$104.45.

This is a truly magnificent compendium about one of the most fascinating of the several groups of seabirds. The book deals with members of the order Procellariiformes, the highly distinctive group of oceanic birds, which includes the albatrosses, fulmars, gadfly petrels, prions, shearwaters, storm-petrels and diving-petrels. The quality of production is excellent.

The first chapter is a brief summary of the general characters of the group stressing special features like the unique formation of the nostrils (the 'tubenoses') and the unusual structure of the bill. The review covers many other matters concerning external morphology, anatomy, body size, allometry, general ecology, breeding ecology, global distribution, populations, systematics and nomenclature. The first half of the book continues in the form of a series of reviews which deal briefly with what is known about the biology of living species in a family by family treatment. The fossil record is mentioned in the opening section to each of these chapters and the body of the text covers in a most competent manner the wide range of topics that constitute the accumulating body of knowledge available from the group as a whole. Furthermore, these reviews help to point out the lack of information on some topics and the imperfect understanding about the biology of certain species.

The remainder of the book deals with breeding biology and is presented in the form of a sequence of chapters on the pre-egg stage, the egg, incubation, and finally the chick. This is the real meat of the book and reflects many of the lifelong interests of the author.

In a work of this type it would be easy to quibble over details but I noted, for example, that the book is short on matters concerning important questions about olfaction and it was

pointed out to me that there is not very much attention given to the interesting matter of polymorphism in the Southern Giant-Petrel, *Macronectes giganteus*. The taxonomy and systematic treatment adopted for the work is essentially conventional with some minor modifications and novelties derived from special knowledge, mostly based on work by fellow New Zealanders. It is revealed that a companion volume is in preparation that will look in detail at subjects such as behaviour and vocalizations, energetics and physiology, populations, food and feeding, distribution, human use, and conservation and management. It might therefore be premature to carp at presumed omissions from this book for they may have been deliberately deferred to a later more extensive discussion.

Personally, I have great admiration for the courage required of a single author to undertake a work of this type in the scientific world of today. The sheer energy and thoroughness of purpose which must go into such compilations must be very demanding. Nothing the least bit comparable has been attempted with respect to petrels since the publication in 1936 of Robert Cushman Murphy's classic *Oceanic birds of South America*.

There are many excellent line drawings scattered throughout the book and a sprinkling of well-chosen and delightful photographs, mostly by the author, all of which illustrate various points or portray certain species. There is an extensive list of references and an Appendix giving an abbreviated checklist of the order showing the genera, species and subspecies names (without synonymy and not always giving authority) alongside a brief description of breeding ranges. There is an index to species and to subject.

It may seem to be an expensive book but it will prove to be indispensable for anyone seriously interested in these magnificent birds. Deserved attention to the delights and fascination of petrels have been well served by John Warham in this the first part of his proposed two work *magnum opus*. The expectation of that companion volume must hold us in suspense for the while.

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