



The Metazoan Parasite Fauna of Grebes (Aves: Podicipediformes) and its Relationship to the Birds' Biology

Source: The Auk, 119(3) : 881-882

Published By: American Ornithological Society

URL: [https://doi.org/10.1642/0004-8038\(2002\)119\[0881:TMPFOG\]2.0.CO;2](https://doi.org/10.1642/0004-8038(2002)119[0881:TMPFOG]2.0.CO;2)

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The Auk 119(3):881–882, 2002

The Metazoan Parasite Fauna of Grebes (Aves: Podicipediformes) and its Relationship to the Birds' Biology.—Robert W. Storer. 2000. Miscellaneous Publications, no. 188. Museum of Zoology, University of Michigan, Ann Arbor, Michigan. iv + 90 pp., 9 illustrations, quarto size. \$17.60. ISSN 0076-8405. Order from: Publications, Museum of Zoology, University of Michigan, 1109 Geddes Avenue, Ann Arbor, Michigan 48109-1079.—This book is an interdisciplinary monograph dealing with ecological and evolutionary interactions between grebe species of the world and their metazoan parasites. It is a unique work for two main reasons. First, the majority of interdisciplinary studies are a result of the joint efforts of at least two specialists with different backgrounds. In this case, an experienced ornithologist has bravely examined parasitology and has looked at empirical data, views, and ideas in a manner that is both similar to and different from that of parasitologists. As the author wrote, "The more deeply I went into parasitology, the more questions arose about the relationships between the parasites and their hosts. . . . What started out as a simple list has led to sets of data which could be analyzed in various way and which could be expanded as new information became available," (p. 1). Second, as far as I know, this is the only comprehensive source of data on all the groups of metazoan parasites associated with an avian order.

The core of the work is the data set related to parasites recorded from grebe species. Information on 113 trematode, 86 cestode, 13 acanthocephalan, 37 nematode, 5 leech, 12 mite, and 15 lice species is included. For each parasite taxon, data on its grebe host(s), site in the host, characteristics of the life cycle (freshwater, marine, etc.), geographical range, intermediate and paratenic hosts (if known) and widely used synonyms are presented. The species are distributed in six groups according to their specificity to the final hosts; 104 helminth and 22 ectoparasite species are believed to represent grebe specialists. Judging from helminth groups of which I have

familiarity, this list is really comprehensive, containing world-wide data from a range of languages and sources. Another essential chapter is the list of the prey animals recorded for each grebe species. These data are crucial from a parasitological point of view, because intermediate hosts of the helminth parasites with yet unknown life cycles have to be sought among prey animal groups.

The analyses presented are very stimulating. Why do grebes act as hosts of so many parasite species? What is the connection between bill morphology and the parasite assemblages occurring in each grebe species? What is the effect of the sympatry of grebe species on their parasite fauna? What is the influence of the diet of a grebe on its parasite fauna? How is the species composition of the helminth assemblages changed as a result of the movement of birds from a freshwater to a saltwater environment? Why do many helminth species, apparently grebe specialists, use dragonfly nymphs as intermediate hosts? These and many other questions elicit one or more possible answers in the analyses presented. Both parasitologists and ornithologists may find many ideas for future research in these pages.

I did find some errors of fact or misprints in the book, for example, the reference book on cestode systematics is cited as "Czaplinski et al. 1994" instead of "Khalil et al. 1994" (p. 18), or the name of the well-known French parasitologist R.-Ph. Dollfus is erroneously given as "Dolfuss" (p. 35). However, such errors are few. The book is written in very accurate and clear language. The terms are correctly used and, in many cases, when likely to be unfamiliar to some readers, they are explained by brief definitions. Very useful appendices to the monograph are the host-parasite list (a list of parasites recorded from each grebe species) and the comprehensive index of taxa and terms.

"I do not think it an exaggeration to say that a profitable lifetime of research could be spent studying the parasites of just the grebes," is the final sentence of Storer's monograph (p. 65). The reader will find numerous arguments supporting that statement in the text. I recommend this book to every ornithologist, no matter whether interested in grebes and their parasites or not, because of its original way of approaching host-parasite associations and extracting evolutionary and ecological information from them. This monograph must be included as obligatory reading for students involved in research in evolutionary biology or community ecology using host-parasite associations as a model, as well as in scientific libraries of institutions involved in ornithological or parasitological research.—BOYKO B. GEORGIEV, *Parasite Biodiversity Group, Central Laboratory of General Ecology, Bulgarian Academy of Sciences, 2 Gagarin Street, 1113 Sofia, Bulgaria. E-mail: bbg@ecolab.bas.bg*