cept of its appearance. Immatures are described as "similar to corresponding plumage of other loons"!

The descriptions of the cormorants also are of uneven quality. In the case of the Double-crested the reader is compelled to wade through a mass of description which includes family characters and is told that the adult is a large black or brown (!) bird. In the description of the nuptial plumage of the Red-faced Cormorant the conspicuous white flank patches are overlooked. The colored plate of the Pelagic and Red-faced Cormorants will not do much to help the beginner. In an inadequately illustrated book such as this, more emphasis on characters useful in separating similar species would be helpful to the novice.

For the Spruce Grouse, the size of egg clutch is given as usually 10 to a dozen but up to 14 or even 16. This presumably is from Bent (1932, U.S. Nat. Mus. Bull. 162:123) but Bent (in the same work, p. 130) with reference to the "Alaska" Spruce Grouse gave figures from 5 to 8. Rand (1947, Can. Field Nat. 61:127-130) concluded that the normal clutch size in that species is 4 to 7, occasionally more, with little evidence of geographical variation.

The book is well printed with very few typographical errors. A few scientific names such as *Oporornis, arcticola, interpres, maximiliani,* and *cinnamomea* are consistently misspelled.

In a work of this magnitude it is easy to find small faults, and the listing of them tends to overemphasize their importance. These days, the primary function of a regional bird book is to make available definite information on the birds of that particular region. This the authors have done commendably and the work will doubtless be the standard reference on Alaskan birds for a long time to come.

W. EARL GODFREY
Curator of Ornithology
National Museum of Canada

The Freshwater Fishes of Canada

By E. P. SLASTENENKO. Toronto, Kiev Printers, 1958. 385 p. $15.00.

This is the first book to appear covering all the fresh-water fishes of Canada. Included are keys to and descriptions of the families, species and subspecies; synonymies; and information on distribution and life history. A glossary, a distributional checklist and a list of references are presented at the end of the book.

The keys are on the whole good, although they break down in places. Some times no morphological characters are given. However, the book is a welcome change from the current trend to overpopularize; synonyms are given and the descriptions are usually scientific and adequate. Although a fairly comprehensive glossary is given it is felt that a few drawings would have greatly aided in the understanding of terms. Inset drawings would also be valuable in the keys.

Unfortunately there are several features which mar this work. Two pages of errata are given and all errors are not included. Words at the end of the lines are often improperly broken and typographical errors are numerous. Most species are illustrated by poorly copied, often muddy looking figures derived from other ichthyological books. Some of the sources of the illustrations are not acknowledged. The map on the last page is almost illegible. The light binding, of paper, does not make the book sturdy enough for field use.

The nomenclature varies considerably from current practice. *Baione*, a monotypic genus for the brook trout which has been synonymized with *Salvelinus* for over 100 years, has been resurrected.

The retention of subspecies in *Salmo gairdneri, S. salar, Oncorhynchus nerka* and *Couesius plumbeus* is not in accordance with recent papers. The river lamprey of the west coast has been shown to be distinct from *Lampetra fluviatilis* and should be called *L. ayresii. Morone* must be considered a synonym of *Roccus.* Although *Amiurus* is retained (generally

now considered a synonym of *Ictalurus*), the family name Ictaluridae is used. The synonymies of at least *Entosphenus japonicus*, *Salvelinus alpinus*, *Perca flavescens*, *Triglopsis thompsoni*, *Cottus ricei*, and *Cottus asper* are incomplete. *Cottus punctulatus* is not known from British Columbia. As the author admits in the introduction, the book is based chiefly on the literature. To this fact many of the weaknesses may be attributed.

The Freshwater Fishes of Canada will prove useful for people in those provinces not covered by regional studies. Its more technical nature will tend to restrict its use to the serious amateur, the fishery biologist and the ichthyologist. The poor illustrations, paper binding and frequent errors combine to make the price of $15 altogether too high.

D. E. McALLISTER
National Museum of Canada
Curator of Fishes

General Biology

By JAMES WATT MAVOR. 5th ed. New York, Macmillan, 1959. 695 p. $6.75.

This standard introductory text to general biology that has been the guide and mentor of so many generations of embryonic biologists has now reached its fifth edition. In general the format has not changed much but the details concerning the nature of the cell and the genetics have been considerably revised. It is still, however, my feeling that the former of these divisions might have been expanded and more emphasis placed on the dynamics of the cell and an attempt made to incorporate some of the recent speculations concerning the origin of life on this planet.

The second part of the book, that dealing with plant life, is, as in the previous edition, somewhat slighted, especially when this book purposes to be a text of general biology. Such topics as plant succession and the evolution of the higher Tracheophyta, controversial as this latter may be, might have been included. Again, as in the case of the cell, I have the impression that the chapter devoted to plant physiology could have been presented in a more dynamic fashion.

As in former editions, the zoological sections are well done. Part 3 dealing with animal life traces the development of the invertebrate and vertebrate groups. Little attempt has been made to explain phylogenetic relationships. Part 4 discusses the comparative anatomical aspect of vertebrate anatomy and physiology. Part 5 is devoted to development and heredity; here again, the section dealing in human heredity could have been expandeed to include more work on the inheritance of human defects, as for many students this particular information will be their sole introduction to this pertinent subject. The concluding section of the book summarizes very clearly and successfully our view on the organic world and the modern theories of evolution. This edition, like its predecessor, has two invaluable appendixes, one a table of the plant and animal kingdoms with pronunciation of names and a second, a glossary of technical terms.

The book is well printed, bound and illustrated. Most of the figures appear to be new, but a few old favorites have maintained their popularity. In all, this is a book to be recommended as a good text for a two-semester introductory biology course.

H. H. J. NESBITT
Biology Department
Carleton University
Ottawa, Ontario

Lead Poisoning as a Mortality Factor in Waterfowl Populations

By FRANK C. BELLROSE. Urbana, State of Illinois, Natural History Survey Division. 50 cents (Bull. Ill. nat. Hist. Surv. 27(3): 235-288. 1959)

Lead poisoning, caused by waterfowl eating lead shot while feeding in shallow water, in areas where long-continued shooting has taken place, is an important cause of mortality. The present report form a comprehensive review of the whole problem, including a discussion of possible solutions, prepared by the investigator who has taken a most active part in research on the subject.

VICTOR E. F. SOLMAN
Canadian Wildlife Service