

is a subject which concerns both the biologist and the administrator.

There are a few minor taxonomic errors in the text and the outline drawings of fishes are weak (and sometimes incomplete). These are very minor blemishes in a book which must be considered as a major contribution to tropical hydrobiology and a most readable and important text-book in the field of fisheries research. P. H. GREENWOOD

THE MAMMALIAN EGG

The Mammalian Egg

By Dr. C. R. Austin. Pp. viii + 183. (Oxford: Blackwell Scientific Publications, Ltd., 1961.) 42s. net.

SINCE Dr. Pincus's monograph, "The Eggs of Mammals", appeared in 1936, considerable advances have been made in the study of the mammalian egg, which to-day is attracting the attention of an increasing number of workers. Consequently, a real need has developed for an up-to-date, authoritative treatise on this subject. This new book is, therefore, especially welcome. The author, Dr. Austin, is well known for his research work into the process of fertilization in mammals. His numerous papers published during the past decade provide the fabric on which the book is based.

To quote from the preface, "this book is an attempt to review in detail available information on mammalian eggs and to discuss briefly the trends of research from the point of view of the cytologist". It is divided into five main sections under the following headings: "General Biology of Eggs", "Structure and Function in Mammalian Eggs", "Cytoplasm", "Membranes and Investments", and "Manipulation of Eggs".

The processes of maturation, fertilization and cleavage are described in considerable detail, with special attention being directed to abnormal forms. This part of the book will prove especially interesting to those concerned with the study of early embryonic development. The reader becomes aware of many deficiencies in present knowledge; for example, the important phenomena of capacitation and fertilization *in vitro* are but poorly understood. Techniques described in the final section will assume considerable importance if egg transfer can be translated successfully from a laboratory research technique into a practical method of improving livestock.

The book is well illustrated with 76 text-figures, 17 of which are in full colour. However, it is debatable whether quite so many colour photographs should have been included, particularly in view of the cost of reproducing colour plates. Unfortunately, a number of the text figures appear out of sequence; for example, Fig. 46 follows directly after Fig. 39, while Fig. 40 is located some 23 pages later.

There is a most useful and commendably up-to-date bibliography, containing nearly 700 references, more than half of which date from 1950 onwards. The very high proportion of recent references gives a good indication of the present degree of activity in this field. In addition to a subject index, there is a complete index of organisms referred to in the text. Two appendixes, one on egg transfer and the other on culture of eggs *in vitro*, contain in summarized form the main details of relevant papers with references. Attention is directed to two errors in Appendix 1:

on p. 125, "Belgian Hare" is classified as a species, whereas it is a breed of rabbit, and on p. 141, it is stated that Hunter, Adams and Rowson (1954) transferred "unfertilized eggs to ewes which were then mated". They did, in fact, transfer fertilized eggs to ewes which had been mated previously with vasectomized rams.

Although relatively expensive, few reproductive physiologists can afford not to have such a useful reference close at hand, while the general biologist will also find in it much of interest. The whole book is very well produced. C. E. ADAMS

WHAT PROGRESS IN RADIOBIOLOGY?

Mechanisms in Radiobiology

Edited by Maurice Errera and Arne Forrsberg. Vol. 1: General Principles. Pp. xv + 534. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1961.) 16 dollars.

Studies on Quantitative Radiation Biology

By Prof. K. G. Zimmer. Translated by H. D. Griffith. Pp. 124. (Edinburgh and London: Oliver and Boyd, Ltd., 1961.) 15s. net.

Radiobiology

Proceedings of the Third Australian Conference on Radiobiology, held at the University, Sydney, 15-18 August, 1960, by the Australian Radiation Society. Edited by P. L. T. Ilbery. Pp. xi + 314. (London: Butterworth and Co. (Publishers), Ltd., 1961.) 63s.

Progress in Photobiology

Proceedings of the Third International Congress on Photobiology, Copenhagen, 1960. Edited by B. Chr. Christensen and B. Buchmann. Pp. xv + 628. (Amsterdam: Elsevier Publishing Co., Inc.; London: D. Van Nostrand Company, Ltd., 1961.) 126s.

THE first of the works listed above attempts (in its two volumes) a general review of radiobiology and may be taken as an occasion for some general comments on the state of this subject. As the second volume on multicellular organisms appeared first (and has already been reviewed—*Nature*, 190, 72; 1961) it is possible in assessing the subject-matter to take this into account. The earlier chapters of the first volume deal with: (1) the physical principles of ionizing radiations; (2) the radiation chemistry of water and simple organic and inorganic solutions; (3) the action of radiations on certain biological macromolecules, isolated and *in situ*. This is followed by chapters on various biochemical processes, on various cytological effects including replication, on radiation genetics and the use of radiations in plant breeding. The last two chapters would have been more happily placed in Volume 2, while Eldjarn's and Pihl's article in Volume 2 on the mechanisms of protective and sensitizing action really belongs to Volume 1.

The authors of the articles in this volume have produced a valuable guide to much of the literature of their subjects. From a study of these articles it will be evident that the subjects considered are at very different stages of development. The radiation chemistry of simple solutions is relatively advanced, and a good deal has been learnt about the effects of