Book Reviews

Fertilization. Lord Rothschild. Methuen, London; Wiley, New York, 1956. 170 pp. Illus. $3.50.

The stimulus that the fertilizing spermatozoon provides to the egg is well matched by the stimulating effect that this book is likely to have on research in its particular field and in biology in general. The special excellence of the present work evidently results from the fact that the author is one of the foremost investigators in the field and, at the same time a lucid, thoughtful, writer of broad general knowledge.

The book is pitched at a level that presupposes some knowledge of general cytology, physiology, and biochemistry. It will, of course, be especially valuable to students and to investigators of animal and plant reproduction. However, it should also be of considerable interest and value to all biologists, to scientists in general, and to educated laymen. For biologists in certain fields, such as virology, enzymology, cellular metabolism, immunology, bioelectricity, the discussions of correlative phenomena in the sperm-egg systems should prove highly nutritive. For the general reader, the book will be a source of enjoyment and information concerning a subject about which he has undoubtedly puzzled since the day he first asked his mother, "Where did I come from?"

The book opens with a descriptive section on some of the morphological changes that occur upon fertilization. This is followed by chapters dealing with interacting substances of eggs and sperm, metabolism of eggs, chemical and physical changes upon fertilization, polyspermy, bioelectricity, and specificity. A short last section lists a number of subjects, in addition to those suggested in the body of the text, that the author considers to be worth further investigation.

The author has not attempted to review all available papers dealing with the various topics he discusses, since he justly considers this inappropriate for a volume of the present size and scope. However, the work is very well documented, with a literature list of 497 titles which include papers that are as current as possible. A classified index is included of plants and animals mentioned in the book. This is to help the reader, where necessary, identify the organism with respect to class or order and also to resolve some of the confusion arising from synonyms.

Of particular significance is the fact that the work is no mere recital of summaries of papers dealing with fertilization, but an analytic treatment of various problems, including valuable suggestions and ideas of the author. Evaluations are given of the extent to which various investigations have furthered knowledge of particular problems. Often this involves critical assessment of various experiments and it is of interest to note, in this regard, that Rothschild applies the same objectivity toward his own investigations as he does toward those of others.

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Physics and Mathematics. Series I. *Progress in Nuclear Energy.* R. A. Charpie, J. Horowitz, D. J. Hughes, and D. J. Littler, Eds. McGraw-Hill, New York; Pergamon, London, 1956. 398 pp. Illus. $12.

This book contains selected papers and digests of papers from the International Conference on the Peaceful Uses of Atomic Energy held in Geneva, August 1955. Some effort has been made to correlate data, experimental methods, and theory in the nuclear and reactor physics fields from the various contributing nations. The first six chapters deal with microscopic behavior of fissionable and other reactor materials; the remaining five chapters deal primarily with theory and experiment on various types of nuclear reactors—homogeneous, thermal, fast, heterogeneous, and intermediate.

Chapter 1 provides a summary of fuel cross sections and neutron yields. It is noted that there still remain surprisingly large discrepancies between measurements made at different installations. Chapter 2 describes methods of measurement of fuel resonance cross sections. The graphs contained in this section contain less detail than those found in the book *Neutron Cross Sections,* BNL-325. Chapter 3 is a Geneva paper giving the present theoretical basis of neutron resonances. Chapter 4 is a new review of methods of measuring scattering cross sections. Chapter 5 discusses the measurement of cross section for xenon-135. Chapter 6 lists resonance capture integrals for many elements of interest in reactor design.

Chapter 7 summarizes all existing data on delayed neutrons but does not resolve the recurring problem facing the reactor designer, namely, the best choice of half-lives and yields. Chapter 8 reviews the experimental data on homogeneous critical assemblies and those with nonuniform fuel distributions. Chapter 9 presents for the first time in one place outlines of methods for analyzing fast reactors and gives a correlation with measurements at Los Alamos and Argonne and in England. Chapter 10 is a Soviet paper on heterogeneous reactors using integral and summation methods. These approaches are not as familiar to American reactor physicists as diffusion methods. Chapter 11 compares theoretical methods of treating intermediate reactors and experimental data on systems designed to test the theories.

I was interested in ascertaining the amount of correlation of international results that appears in this new book and was disappointed to find that it consists essentially of selected reprints. Because of the importance of the Geneva conference in the area of nuclear engineering and science, it is very likely that greater use will be given to the original volumes than to this book. Only in about four chapters is there any analysis and comparison of papers presented at the conference. It may be, however, that this book will serve a useful purpose in calling the attention of the more casual reader to papers agreed to be of greatest importance in the field.

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Progress in Neurobiology: I, Neurochemistry. Saul R. Korey and John I. Nurnberger, Eds. Hoeber-Harper, New York, 1956. 244 pp. Illus. $6.75.

This excellent volume represents the proceedings of the first of a series of symposia on neurochemistry organized by Saul Korey and John Nurnberger and held in conjunction with the annual meetings of the American Neurological Association. The editors have shown sound judgment and foresight in addition to a willingness to expend considerable effort in a realization of this concept.

Although the volume consists of a series of apparently unrelated but excellent papers, there is considerable com-