

Book Reviews

All unsigned reviews were made by the Editor.

Ecology

ENERGY EXCHANGE IN THE BIOSPHERE, David M. Gates, 151 pp., \$3.75, Harper and Row, Publishers, New York 16, 1962.

This book should be very useful to the teacher looking for material to interest the advanced student in either biology or physics. The text is clearly written, although detailed and exact, and the illustrations and diagrams are excellent. The discussion of radiation instruments should be particularly valuable in planning experimental studies.

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GAME BIOLOGY AND GAME MANAGEMENT, A LABORATORY MANUAL, Howard J. Stains, 143 pp., \$4.25, Burgess Publishing Company, Minneapolis, Minnesota, 1962.

This is a laboratory and field manual for a beginning college course in game management. The manual is divided into two sections—game biology and game management.

Field biology is emphasized as fundamental to an understanding of game management techniques. Suggestions are outlined on how to make accurate notes on field observations. Instructions are given on trapping methods and marking wildlife for recapture, use of appropriate maps and how to accurately measure areas, methods of censusing wildlife populations, and the use of statistics. These, and other important tools of the field biologist are included.

The exercises in the second section are applicable to a course that would be exclusively designed for game management. The emphasis is on planning toward habitat improvement. Information is given on how to map and design areas to improve wildlife food and cover.

While the field biology section is of primary significance to the understanding of wildlife management it seems that the latter section might be expanded to good advantage. Factors such as carrying capacity, cruising radius, interspersions of cover, seasonal and territorial requirements might be emphasized in relation to manipulation of environmental controls.

The manual on the whole is excellent and should provide a suitable and effective guide to college instructors working with beginning students in game biology and management. There are many fine illustrations and line drawings. The manual should serve also as a valuable reference for high school biology teachers who

may have an interest in field biology and game management.

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Biophysics and Biochemistry

BIOPHYSICS, CONCEPTS AND MECHANISMS, E. J. Casey, 335 pp., \$7.95, Reinhold Publishing Corporation, New York 22, 1962.

More than any other volume in the field, this provides the subject matter of biophysics with a coherence which almost justifies its existence as a separate discipline rather than a collection of unrelated procedures which might as well be included in courses which deal with the biological problems. Man is used as an example of a living organism to the exclusion of other forms but only to limit the discussion and to demonstrate more clearly the applications of methods and concepts.

The presentation is remarkably intelligible in an area which is generally considered difficult. Much of this clarity derives from the inclusion of a chapter entitled, in part, "Ten Useful Pillars of Mathematical Expression" which presents in fifteen pages the basic concepts of the calculus, statistical analysis, and infinite series. No effort is made to replace these mathematical disciplines from the curriculum, but the author wants to use their content in the body of the text and will not tolerate any excuses. To quote (page 8), "The approach made in this book introducing biophysics is to use the mathematical method of concise expression wherever possible without allowing the elegance to cloud the facts or ideas being discussed." This statement seems to have remembered throughout the remaining ten chapters which cover, first, the physical processes and reactions, then, some specific applications to such biological problems as effects of ionizing radiations, nerve and muscle action, and control systems. It is a useful book, dealing with concepts and their applications rather than a collection of facts to be memorized.

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RADIOACTIVITY: FUNDAMENTALS AND EXPERIMENTS, Sisters M. Hermias and M. Joecile, 209 pp., \$1.75 (paperback), Holt, Rinehart and Winston, Inc., New York, 1963.

This book is essentially a laboratory manual prepared to serve the students of the biological sciences as well as the students of the physical sciences. It is divided into two sections followed by an appendix.

Section I is an annotated outline of facts and