of fact and interpretation in early work have obviously been caught and eliminated at various stages prior to publication of the finished volume, so that it presents a considerable unanimity of opinon. This is not to say that other errors may not be revealed by later researches.

Approximately half of the papers may be classed as physical or nuclear-chemical in content, and half as chemical. Some three-quarters of the papers deal with plutonium, about one-sixth with neptunium, and only a few with americium and curium. Partly because of the comparative nature of some studies, papers dealing with the rare earths, radium, actinium, thorium, protactinium, and uranium are also found. Aside from the large body of data on the synthetic elements, the greatest contributions of the volume to other fields of science are techniques and instruments developed for nuclear-chemical studies, particularly with alpha emitters, and the demonstration of the possibilities for ingenious applications of microtechniques to problems in inorganic chemistry. The book also has a pedagogic value for research students, in demonstrating the applications of textbook material to actual laboratory problems, and the methods used to obtain scientific data in new situations.

LEONARD I. KATZIN

Argonne National Laboratory

Traité de Zoologie: Anatomie, Systématique, Biologie: Oiseaux, Vol. XV. Pierre-P. Grassé, ed. Paris VI^{e}, France: Masson et Cie, 1950. 1164 pp. 6000 fr.

With the appearance of this thick volume all students of avian biology are aided in their work by a comprehensive treatise that is literally packed with useful information, well presented and amply illustrated, and accompanied by well-selected lists of references to the literature. Unlike the similarly comprehensive volume written by Stresemann some years ago, the present work is the product of a group of authors. The advantage of a group of specialists' pooling their information is often offset by a resulting lack of uniformity in approach and presentation, but the editor of this volume has overcome the lack to a remarkable degree, and the volume is free from the literary jerks and mental changes of focus usually found in such composite treatises.

N. Mayaud contributed six chapters, on skin and plumage, biology of reproduction, food, longevity, voice and nonvocal sounds, and behavior and social life; A. Portmann eight chapters, on skeleton, nervous system, sense organs, circulatory system, respiratory system, digestive tract, body temperature and warm-bloodedness, and postembryonic development; E. OEhmichen three chapters, on musculature, flight, and terrestrial locomotion, swimming, and diving; P.-P. Grassé two chapters, on the uropygial gland and the organization of social life; A. Rochon-Duvigneaud a single chapter, on eyes and vision; J. Benoir three chapters, on endocrine glands, urogenital system, reproduction-sexual characters and hormones in relation to the seasonal sexual cycle; R. Matthey one chapter, on chromosomes of birds; J. Pasteels one chapter, on embryonic development; F. Bourlière two chapters, on ecological factors and adjustments, and physiology of migration; J. Piveteau one chapter, on the origin and evolution of birds; J. Berlioz three chapters, on the systematic description of the subclasses, orders, and families of birds, geographic distribution, and general aspects and origin of migration; and E. Letard the final chapter, on domestic birds' origin.

The contents of the book are made readily accessible by a good index and a detailed table of contents. The illustrations and the text are well printed but the type of paper used is not uniform throughout the book. The volume should be of great use and value to workers in many and diverse fields that utilize avian materials in their studies, and deserves a wide distribution among scientific libraries.

HERBERT FRIEDMANN

U. S. National Museum

Survey of Biological Progress, Vol. 1. George S. Avery, Jr., ed. New York: Academic Press, 1949. 396 pp. $6.80.

This stimulating volume is the first *Survey of Biological Progress,* and is the result of an undertaking which its editors hope will be repeated annually. In the words of its editor-in-chief, it is designed to provide "a medium for integrated presentation of facts and thoughts from all fields of biology," "to offset in a certain measure the isolating effect of rapidly increasing specialization" and "to serve the biologist who wishes to be well-informed in fields marginal to or beyond his own special sphere of interests—fields he would have neither the time nor opportunity to follow systematically in the original literature." The editorial staff and the advisory board, along with the twelve authors and the institutions they represent, are indicative of the high standards of the articles included in the *Survey* and the dependability of its contents.

The volume includes eleven chapters, the first of which is a discussion by Harriet B. Creighton on "Teaching Biology Today"—a brilliant and challenging presentation of the general goals in teaching an introductory course in biological science. The remaining chapters are devoted to recent developments in a large area of biology, in some instances of fundamental sciences and in others of applied sciences.

Many chapters emphasize the influence of findings in one field on the interpretations of known facts in allied fields. The outstanding importance of cancer research and the aspects of cellular physiology to which it is related is indicated by the fact that 42 percent of that part of the volume relating to current research is devoted to a consideration of viruses, enzymes, genes, and antigens and their interrelations as well as their relationships to cancer problems. There are 594 references in the four chapters covering this large segment of the book.

In his stimulating chapter on "Genes and Gene Action," Bentley Glass shows how current researches on the nature of gene action are uniting the "phenomena of classical genetics, cytoplasmic inheritance, cellular differentiation, and enzymatic adaptation." After summarizing Sonneborn's view that "cancer may result