Book Reviews

Bergey's manual of determinative bacteriology. (6th ed.) Robert S. Breed, E. G. D. Murray, A. Parker Hitchens, *et al.* Baltimore: Williams & Wilkins, 1948. Pp. xvi + 1529. $15.00.

Bergey's Manual has for many years represented the efforts of American bacteriologists to catalogue, in an orderly and systematic scheme of classification, the highly varied and variable living organisms which are the objects of their study. Never (contrary to the belief of many) sanctioned as representing the official terminology of the Society of American Bacteriologists, it has, nevertheless, enjoyed the support of that organization.

This, the 6th edition of the well-known manual, has been long in preparation and, according to the editors, represents more than the usual amount of time and effort. The active collaboration of specialists representing many diverse fields has added considerable authority to the taxonomic dicta presented. A change to double-column format and an increase in the number of pages have allowed a tremendous amount of information to be contained within one volume. No longer merely a taxonomic key, in the newer sections of the book especially, it represents a compilation of facts quite encyclopedic in scope.

Conspicuous among the innovations in this edition is the inclusion of the viruses and rickettsiae, presented as supplements to the class *Schizomycetes* or fission fungi. While properly these are not designated as members of that botanic division, their appearance reflects the difficulty of the professional bacteriologist adequately to define the subjects of his studies; a dilemma which has provoked the appearance of the science of "microbiology" to recognize the diverse biological characteristics of these organisms. It is of some interest that this is still a manual of "bacteriology"!

Although to the medical "virologist" such terms as *Formido inexorabilis* for the virus of rabies and *Phagus lacerans* for one of the streptococcus bacteriophages may seem strange, inappropriate, and somewhat difficult of assimilation, and even if one were to debate the appropriateness of inclusion of these forms in a classification of bacteria (fungi ?), the masterly treatment of the information concerning them which is gathered here evokes profound respect for those who condensed it and affords a reliable source of knowledge to the student and specialist alike. Previous taxonomic schemes for the rickettsiae have been presented; the present one, with its integration of other intracellular parasites, the *Bartonella,* and the "higher" viruses of psittacosis and related types, clearly indicates the similarities of this fascinating borderland of disease agents.

Another new and interesting addition is the source and habitat index which aids in stimulating, especially in the student, a ready appreciation of the markedly diverse activities and interrelationships of microorganisms.

As is to be expected, many taxonomic redistributions are found in this edition; in most instances sufficient explanation is given for the changes to further the teaching functions of the manual. Throughout, but more conspicuous in some parts than others, the attendant discussion of historical background, orthographic problems, and classical derivations flavors the text and makes it interesting reading as well as a systematist's key.

The collaborators and editors have prepared a volume which must be investigated by all who claim to be bacteriologists; and while it is primarily for them as specialists, it can be used with profit by all who have even a passing interest in microorganisms.

WILLIAM S. PRESTON

University of Michigan

Organizing scientific research for war: the administrative history of the Office of Scientific Research and Development. Irvin Stewart. Boston: Atlantic–Little, Brown, 1948. Pp. 358. $5.00.

This is another volume in the series entitled "Science in World War II" which constitutes the history of the Office of Scientific Research and Development. The author is former deputy director of OSRD and now president of West Virginia University. The first volume in this series, *Scientists against time,* by James Phinney Baxter, provides an over-all picture of the role played by science in the greatest and most terrible of all wars. Succeeding volumes, already issued or forthcoming, discuss, in more detail, special subjects such as New Weapons for Air Warfare, Combat Scientists, Applied Physics, and Advances in Military Medicine.

Dr. Stewart's book, however, does not recount the advances made in a special subject field. Rather, he has had the task of telling the administrative history of the Office of Scientific Research and Development.

Admittedly, this subject does not have the interest and exciting appeal which some of the other topics, already presented, carry. Nevertheless, this history of how the OSRD was organized and how it functioned, through reams of paper and miles of red tape, is despite its lack of glamour, one of the epics of the past war, and Dr. Stewart is to be commended for the excellence of his work.

The book is divided into four parts, each of which is subdivided into chapters. In Part 1, entitled "Harnessing Science," the author traces the origins of OSRD from its beginning in the NDRC through the establishment of the various committees, panels, divisions, and the Chairman's Office. Part 2 takes up the question of liaison groups and how contact was established and maintained with the various branches of the armed services and with allied governments. Part 3 includes the various operating procedures, in which Dr. Stewart discusses such vital matters as contracts for research, fiscal affairs, patent

policy priorities, security, scientific manpower, and publications. The final part tells of the demobilization of OSRD and contains a concluding chapter on "Retrospect and Prospect." Here, the author points out a fact apparently still not grasped by all who should understand it—namely, that OSRD was a temporary organization set up to do an emergency job. This it did superbly. If there is one lesson among many pointed out by this book, it is that we need a new type of organization to do in peace as well as in war all the tasks so splendidly done by OSRD and many additional jobs as well.

As this is written, the National Science Foundation Bill still languishes in Congress. The supporters of this legislation will find much food for thought in Dr. Stewart's important book.

MORRIS C. LEIKIND
Library of Congress, Washington, D. C.

Introduction to genetics and cytogenetics. Herbert Parkes Riley. New York: John Wiley; London: Chapman & Hall, 1948. Pp. xii + 596. (Illustrated.) $5.00.

We have been asked at times to recommend a book on heredity for the average reader with little knowledge of biology. This book by Dr. Riley seems to us perhaps the best we have seen for this purpose. It is designed as an introductory text for students in genetics or for the average reader who wishes to know something of the laws of heredity and serves these two purposes admirably.

The approach used by Dr. Riley is the logical one rather than a more or less historical development of genetics. The first part of the book is devoted to the physical basis of heredity, and since this phase of the work is covered adequately and written simply, the beginning student should understand it.

The following 8 chapters are devoted to segregations, linkage, crossing over, multiple alleles, and distribution of genes. The chapter on probability is concise and gives the essentials necessary to an understanding of the laws of genetics without going into a statistical treatise.

The third section of the book is concerned with the nature of gene action, while the last part deals with chromosomal irregularities. Both of these sections seem adequate for the beginning student. There is considerable material on human inheritance, including a chapter on the blood groups.

This book, which is on the whole excellent, is well illustrated, and many of the illustrations are new. There are, however, a few minor corrections that might be made if there are to be extra printings. On page 358 there is a reference to Table 19 (p. 350), where it is stated there are columns headed "x, σ, and v." Actually, in Table 19 the columns are headed "Mean, S.D., and C.V." These terms mean the same thing, but the former usage is the current one. Also, on page 327 there is an illustration showing two ears of corn segregating for the color factors C and I. Actually, C and I are allelic, and the factor is A or R not C.

W. RALPH SINGLETON
Connecticut Agricultural Experiment Station and *Brookhaven National Laboratory*

Scientific Book Register

BACHMAN, GEORGE W., and MERIAM, LEWIS. *The issue of compulsory health insurance: a study prepared at the request of Senator H. Alexander Smith, chairman of the Subcommittee on Health of the Senate Committee on Labor and Public Welfare.* Washington, D. C.: Brookings Institution, 1948. Pp. ix + 271. $2.00, paper; $4.00, cloth.

BOYNTON, HOLMES. (Ed.) *The beginnings of modern science: scientific writings of the 16th, 17th, and 18th centuries.* New York: Walter J. Black, 1948. Pp. xv + 634. (Illustrated.) $2.39.

HAGE, ROBERT E. *Jet propulsion in commercial air transportation.* Princeton, N. J.: Princeton Univ. Press, 1948. Pp. vii + 91. (Illustrated.) $1.50.

HALLIDAY, JAMES L. *Psychosocial medicine: a study of the sick society.* New York: W. W. Norton, 1948. Pp. 278. $3.50.

HAUSMAN, LEON AUGUSTUS. *Birds of prey of northeastern North America.* (Illustrated in pen and ink by Jacob Bates Abbot.) New Brunswick, N. J.: Rutgers Univ. Press, 1948. Pp. xxv + 164. $3.75.

HEWSTON, ELIZABETH M., *et al. Vitamin and mineral content of certain foods as affected by home preparation.* (U. S. Dept. of Agriculture Misc. Publ. No. 628.) Washington, D. C.: Superintendent of Documents, 1948. Pp. iv + 76. $.30.

KIMBARK, EDWARD WILSON. *Power system stability.* Vol. I: *Elements of stability calculations.* New York: John Wiley; London: Chapman & Hall, 1948. Pp. viii + 355. (Illustrated.) $6.00.

MARCH, ARTHUR. *Natur und Erkenntnis: die Welt in der Konstruktion des heutigen Physikers.* Vienna: Springer, 1948. Pp. v + 239. (Illustrated.) $4.20.

PARK, ORLANDO. *Observations on Batrisodes (Coleoptera: Pselaphidae), with particular reference to the American species east of the Rocky Mountains.* (Bull. Chicago Academy of Sciences, Vol. 8, No. 3.) Chicago: The Academy, 1947. Pp. 45–132. (Illustrated.)

SHOEMAKER, JAMES SHELDON. *Small-fruit culture: a text for instruction and reference work and a guide for field practice.* Philadelphia-Toronto: Blakiston, 1948. Pp. vii + 433. (Illustrated.) $4.00.

STORCH, OTTO. *Die Sonderstellung des Menschen in Lebensabspiel und Vererbung.* Vienna: Springer, 1948. Pp. vi + 62. 4.80 sfr.

THEILHEIMER, W. *Synthetische Methoden der organischen Chemie.* (Vo. II.) Basel, Switzerland: S. Karger, 1948. Pp. viii + 309. 35sfr.

TROMP, S. W. *The religion of the modern scientist (neomaterialism).* Leiden: Sijthoff, 1947. Pp. xxiv + 480. (Illustrated.) 15, 50 hfl.

ZELUFF, VIN, and MARKUS, JOHN. *What electronics does.* New York-Toronto-London: McGraw-Hill, 1948. Pp. ix + 306. (Illustrated.) $3.00.