certain characters are selected under a given set of environmental conditions. In any event, Simpson's numerous ideas deserve careful study by all scientists who wish to further our knowledge of evolution, either through the synthesis of available knowledge or through experiments designed and performed to increase this knowledge.

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Advances in Virus Research, Vol. I. Kenneth M. Smith and Max A. Lauffer, Eds. Academic Press, New York, 1953. 362 pp. Illus. $8.

It can hardly be said that this newcomer in the growing family of the "Advances" series fills any urgently felt need. Discussions of most areas of virus research have multiplied at a tremendous rate in the past few years, either as records of symposia or as reviews in various periodicals. Yet, *Advances in Virus Research* can make a real contribution by bringing together information from different areas of virology, and especially by encouraging the growth of the comparative approach.

The first volume contains generally sensible and occasionally authoritative material. What strikes the reader most forcibly is the uneven development of various areas. Epstein's opening article, a review limited to some well-known aspects of bacteriophage work, shows the enormous progress made possible by the use of strictly quantitative methods. Biological and biochemical aspects of phage research are, however, presented in a sketchy and somewhat confused manner. The two articles on plant viruses by Bennett and Black, both up-to-date and authoritative, serve to illustrate the urgent need for simple quantitative methods applicable to plant viruses. A host of challenging observations—for example, the joint transmission by insects of two viruses both needed for production of a disease—must await the availability of precise methods of study. The problem of "plant-and-insect" viruses, well presented by Black, is one of the most fascinating of biology and we must admire the patience and ingenuity required for work in this field.

The two papers that follow present an interesting contrast. Bergold's discussion of viruses that produce insect diseases shows, on the one hand, the need to complement the fine chemical and morphological observations (mainly the author's own) with precise work on virus growth and synthesis. Henle's article on influenza virus multiplication, a lengthy and somewhat overdetailed review, shows, on the other hand, the handicap of purely biological work on virus growth without close integration with biochemical analysis. It is almost inconceivable that even such basic information as the nucleic acid content and composition of influenza viruses should still be a matter of speculation.

"The focus of interest of this series [being] the virus, not the disease," as stated in the preface, Melnick's excellent review on poliomyelitis brings the reader a somewhat distressing realization of the primitive state of our knowledge concerning the biology and biochemistry of the agent of this most stubbornly investigated disease. Sharp's review of purification of animal viruses gives a useful compilation of recent advances in methodology. Markham's concluding article on nucleic acids, which unfortunately lacks the most recent information on desoxyribonucleic acid structure, is mainly valuable for the description of work on enzymatic degradation of ribonucleic acid.

As a whole this volume seems to suffer, not only from an apparent delay in publication, but also from the absence of an integrated plan. The suggestion might be made that the manuscripts for each future volume be submitted to a subeditor who, in an introductory article, would place the various contributions in some general perspective.

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An Introduction to the Theory of Seismology, ed. 2. K. E. Bullen. Cambridge Univ. Press, New York, 1954. 296 pp. Illus. $6.50.

Dr. Bullen has changed the text but very little in this revised edition. A comparison between the 1947 and the present editions shows that many pages are identical. This is not a criticism, however, but rather a compliment to the author. His original exposition has met the test of the critics, and although little new has been added to his *Introduction,* either edition is a "must" for the shelves of any geophysical library.

In his introductory chapter, the author treats the history of seismology in a concise manner but does introduce most of the major personalities and projects that pertain to the development of this science. He provides a logical plan for developing his text and then follows this plan closely and explains his points clearly.

In the chapters on elasticity and the wave theories of both body and surface waves, Bullen provides an excellent position. Although he busies himself with the major phenomena, these are explained and proved both clearly and comprehensively. These chapters comprise the best section of the book.

This book does not propose to be a directive on station operation, and a critic is always trying to change the purpose of the author when he makes suggestions. The reader learns very little about station operation from this work, and it does not explain sufficiently the operation or characteristics of various types of instruments. Again, the technique of locating epicenters, the interpretation of seismograms, and so forth, is not sufficiently explained. For the student the material presented is insufficient, and for the teacher the material is superfluous. In some places, the author's quest for brevity has resulted in his being too brief. In Chapter xv, for example, in treating Fur-

ther Topics, some dozen topics are mentioned in 10 pages and these cover the field from Effects of Earthquakes to Seismic Prospecting and Atomic Bombs. As a result, little is learned from such a hurried treatise.

The revised edition does contain a major change in the addition of a list of classified references. The list, although fairly well chosen, is by no means complete. Again, a reader would like something more comprehensive than has been offered. The section on Seismic Prospecting should mention the textbooks by Leet, Nettleton, Heiland, Jakowsky, Dobrin, Dix, and others. These are the most complete textbooks to be found in the English language for this classification of seismology. The references to articles in geophysical journals would number many more.

The book is well bound and the type is both attractive and clear. In general, it provides a handy reference book for a teacher, and parts of it, as mentioned earlier, represent a comprehensive exposé for the student.

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Les Groupes Sanguins Chez l'Homme: Etude Sérologique et Génétique. Jacques Ruffié. Masson, Paris, 1953, 207 pp. 1200 fr.

This new work is notable for its up-to-dateness and complete coverage of the field. It presents an admirable summary of the work of the last few years in blood grouping, yet manages to cover the salient historical facts also.

Starting with a general chapter, the author discusses successively the ABO system, the Lewis, MNS and PQ systems, the Rh system, and the Lutheran, Kell-Cellano, Duffy, Kidd, Jay, Vel, Levay, Jobbins, Graydon, Ven and Miltenberger factors and systems. Finally, a few pages (too few in the opinion of this reviewer) are devoted to the principles of probability.

The treatment of the ABO system is noteworthy for its coverage of recent discoveries and theories. Here one finds good accounts of the subgroups of A and AB, of the H antigen of Morgan, of Hirszfeld's theory of pleiades, the theory of Morgan and Watkins, and the new ABO blood group found in Bombay.

The treatment of the Rh system is outstanding. The immunological and genetical bases are stressed. The theories of Wiener and those of Fisher, and the Wiener and Race-Fisher notations are clearly presented and compared. The author is definitely in favor of the theory and notation of Fisher.

Although practically no mathematics is used, methods of calculation of gene frequencies are discussed, and nomograms are given for the calculations of the gene frequencies p and q and σ_D for the ABO system.

It is difficult to find vulnerable points to criticize. Probably because of the author's desire to be up to date, earlier work is often skimpily referred to or omitted entirely. For example, the fact that nomograms which do exactly what is claimed for those in this volume have been constructed by other workers and appear in a number of books (Hirszfeld, Schiff, and Boyd) is not mentioned. Also the book contains a number of misprints; fortunately they are for the most part amusing rather than serious. Thus the author Barbara E. Dodd masquerades through pages and pages as Dood. These are very minor flaws in an otherwise excellent treatise.

This volume serves as a very clear exposition of the present state of the rapidly expanding, subject of blood groups, very modern in outlook and bibliography, which should be useful to all who can read French.

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New Books

Le Mécanisme de la Vision des Couleurs: Physiologie—Pathologie. J. Segal. G. Doin, Paris, 1953. 351 pp. Illus. + colored plate. 3000 fr.

Great Systems of Yoga. Ernest Wood. Philosophical Library, New York, 1954. 168 pp. $3.50.

Metabolism of Steroid Hormones. Ralph I. Dorfman and Frank Ungar. Burgess, Minneapolis, Minn., 1953. 170 pp. Illus. $4.00.

In Quest of a New Ethics. Charles Mayer; trans. by Harold A. Larrabee. Beacon Press, Boston, 1954. 321 pp. $4.00.

Formaldehyde. 2nd ed. American Chemical Society Monograph #120. J. Frederic Walker. Reinhold, New York, 1953. 575 pp. Illus. $12.00.

Physics: Principles and Applications. 2nd. ed. Henry Margenau, William W. Watson, and C. G. Montgomery. McGraw-Hill, New York–London, 1953. 814 pp. Illus. $7.50.

Modern Electroplating. Sponsored by the Electrochemical Society, Inc. Allen G. Gray, Ed. Wiley, New York; Chapman & Hall, London, 1953. 563 pp. Illus. $8.50.

Organic Chemistry. 2nd ed. Howard J. Lucas. American Book, New York, 1953. 726 pp. $7.00.

Prestressed Concrete. Y. Guyon. Edited by W. M. Johns; trans. by A. J. Harris, J. D. Harris, and T. O. Lazarides. Wiley, New York; Contractors Record, London, 1953. 543 pp. Illus. $12.00.

Clay Mineralogy. Ralph E. Grim. McGraw-Hill, New York–London, 1953. 384 pp. Illus. $9.00.

Enumeratio Spermatophytarum Japonicarum, Vol. II. A bibliographic enumeration of flowering plants indigenous to or long cultivated in Japan and its adjacent islands. Hiroshi Hara. Iwanami Shoten, Tokyo, 1952. 280 pp. + index of genera. 900 yen.

Tests and Standards for New and Nonofficial Remedies. The Chemical Laboratory, American Medical Association. Lippincott, Philadelphia–London, 1953. 327 pp. $4.00.

The Dawn of the Post-Modern Era. Dimensions of human life in the last half of the twentieth century. Elwyn Judson Trueblood. Philosophical Library, New York, 1954. 198 pp. $3.75.

Twenty-five Years of Sex Research. History of the National Research Council Committee for Research in Problems of Sex, 1922–1947. Sophie D. Aberle and George W. Corner. Saunders, Philadelphia–London, 1953. 248 pp.