understood, and care is taken to explain clearly points that ordinarily tend to be difficult for the student to grasp. However, in some instances the author's statements are not as precise as might be desired.

The comprehensiveness of coverage of the theory of magnetic amplifiers tends to make this book well suited for use as a textbook in a senior-level course in electrical engineering. The complete lack of problems and the relatively great expense of the book resulting from the inclusion of a large amount of material that would be wholly out of place in such a course tend to detract from the value of the book for class use. Specifically, the material on testing of magnetic materials and on the construction of magnetic amplifiers has no place in a course of such nature; furthermore, because of an almost complete lack of application of the concepts of transfer function and the mathematical analysis developed in Chapters 4–20, the discussions of applications in Chapters 23–28 have little value for a senior-level course.

However, this book should serve as an excellent reference book for the practicing engineer and the senior student alike.

GORDON J. MURPHY
Electrical Engineering Department, University of Minnesota

Physicochemical Calculations. E. A. Guggenheim and J. E. Prue. Series in Physics. J. De Boer, H. Brinkman, and H. B. G. Casimir, Eds. Interscience, New York; North-Holland, Amsterdam, 1955. xii + 491 pp. Illus. $7.

Physicochemical Calculations will fill a real need for a modern source book on the details of physicochemical computations long felt by physical chemistry teachers and by research workers in this area. The book contains 171 problems based on published work in physical chemistry or chemical physics. Each problem is presented in four sections: namely, data, including detailed references to the sources; procedure, which describes the method of calculation; detailed numerical calculation, paying particular attention to units; discussion of significance of the result and the relation to other work.

The problems are divided into 24 groups on the basis of their subject matter. These groups are atomic and molecular weights, Avogadro number, molecular velocities, interatomic distances, moments of inertia, characteristic frequencies, electric moments and polarizabilities, energies and enthalpies, entropies, heat capacities, equation of state, mixtures of nonelectrolytes, electrolyte solutions, conductance and diffusion of electrolytes, gaseous equilibria, chemical equilibria involving solids, solution equilibria, acid-base equilibria, general electrolyte equilibria, solid surfaces, liquid surfaces, gas kinetics, solution kinetics, radioactivity.

As may be seen from the list of subjects, there is material that will be valuable to the student and the practitioner of physical chemistry at all levels. We are indebted to the authors for their painstaking effort.

ARTHUR TOBOLSKY
Department of Chemistry, Princeton University

Enzymologie. Eine Darstellung für Chemiker, Biologen und Mediziner. Otto Hoffmann-Ostenhof. Springer, Vienna, 1954. xvi + 772 pp. Illus. $26.65.

This book is an expansion of a two-semester course in enzymology for advanced students of chemistry given by the author at the University of Vienna. The first 17 chapters (175 pages) deal with general aspects of enzyme chemistry —history, kinetics, general methods of purification, thermodynamic considerations, analytic procedures employed to follow enzymatic reactions, and so forth. These subjects are not treated extensively, but the material should be useful to a beginning student in this field.

A separate chapter has been devoted to nomenclature, a specialty of the author; in fact the author's method of nomenclature for enzymes is used throughout the book. To give a few examples, D-amino acid oxidase is called D-amino acid $\rightarrow O_2$-transdehydrogenase, DPN-cytochrome c-reductase becomes DPN $\cdot H_2 \rightarrow$ cytochrome c-transelectronase, and phosphorylase is glucose-1-phosphate $\longrightarrow$ amylose-transglucosidase. In some cases, even though much is known about substrate specificity and the mode of action of the enzyme, it has been impossible to arrive at a systematic name, and the author has retained the trivial name of the enzyme, for example, pepsin, trypsin, papain. For those less adventuresome in the matter of nomenclature, the traditional name can be found in parentheses in the text or index. Some readers may consider it a minor annoyance to find the traditional name of an enzyme in the index and there cross-referenced to the author's terminology before finding the page number.

Chapters 18 to 47 (497 pages) contain discussions on the properties of individual enzymes; this portion of the text assumes the proportions of a *Handbuch*. The treatment of the individual biocatalysts is, of course, not as extensive as in a treatise such as *The Enzymes,* but the author has certainly made an effort to include pertinent facts concerning as many enzymes as possible. Literature references, frequently up to 1953, are included in each discussion. In the attempt to make the book as current as possible there has been an occasional presentation of certain material as fact which is still in the realm of theory. For example, on page 166 coA-phosphate is stated to be the intermediate of Kaufman's P-enzyme reaction.

The material in the book is well organized, and the descriptive parts are presented in a concise manner. The section of the text dealing with the individual enzymes should be helpful as a reference source for the student of enzymology.

G. W. E. PLAUT
Department of Biochemistry, New York University College of Medicine

The Biology of Man. John S. Hensill. With chapters by Joel F. Gustafson and Herman Zaiman. Blakiston, New York, ed. 3, 1954 (Order from McGraw-Hill, New York). vii + 440 pp. Illus. $5.50.

The present book was developed by the author for use in a program in general education. He states his objectives as follows: "This book is planned to achieve several objectives which will give the student a fuller, richer life through an understanding of his own fundamental nature: (1) to understand the relation of other organisms to, and the effects of other organisms on, the human organism; (2) to understand the normal and some of the abnormal processes involved in the origin and development of human life; (3) to understand the mechanism by which human characteristics are, or are not, inherited; and (4) to understand and appreciate the place, force, and significance of biological science in our modern society. Through these the student accumulates a background of information about the one subject that interests him most, himself."

This presentation is a far cry from the older "health and hygiene" approach. Fundamental information is intelligently presented in a manner that develops recent physiological principles. If the student assimilates this information, he will possess an understanding of his anatomical and physiological self, attained by few college students. The presentation of chemical information necessary for understanding physiological activity is mature but not beyond the capabilities of the average college student. Except for a greater stress upon human character-

istics than is usually found in introductory biology textbooks, the presentation of heredity offers little that is unique.

Evolutionary relationships and disease relationships of organisms to man are adequately discussed. Most biologists will undoubtedly wish to see greater space devoted to affinities between plants and man and the invertebrates and man. The force and significance of biological science on our modern society is left for the instructor to develop, or it is assumed that the student will make these relationships for himself.

Where man is the focus of biological study, and where fundamental information is required in a course of biology, this book rates serious consideration.

LELAND P. JOHNSON
Department of Biology, Drake University

Statistical Problems of the Kinsey Report on Sexual Behavior in the Human Male. W. G. Cochran, F. Mosteller, and J. W. Tukey. American Statistical Assoc., Washington, 1954. x + 338 pp.

This volume contains a critique, by a committee of the American Statistical Association, of the methodological aspects of Kinsey's *Sexual Behavior in the Human Male.* A 42-page concise summary of the issues is followed by a series of appendixes in which are found detailed accounts.

Appendix A (110 pages) is a reproduction and evaluation of six leading reviews (in journals) of Kinsey's book. In general, these three mathematical statisticians agree with the previous critics, who had pointed out many serious shortcomings in Kinsey's methods. In Appendix B, prepared by W. O. Jenkins (a psychologist), one finds that by comparison with the eight other most important sex studies the work of Kinsey is superior, even though far from perfect.

The remaining five appendixes are concerned primarily with the problems of sampling and statistical treatment of results. Because of refusals, it becomes very difficult, even with true probability sampling, to arrive at precise percentages and averages for sexual behaviors. Refusals increase the width of confidence limits so much that if x dollars are required to get a nonrefuser, it may be worth more than $10x$ dollars to persuade a refuser to respond.

This book should become required reading for sociologists, psychologists, and others who must depend on sampling surveys of human populations.

QUINN MCNEMAR
Department of Psychology, Stanford University

Health Careers Guidebook. National Health Council, New York, 1955. 153 pp. Illus.

This 156 page book is the most attractive and interesting guidance aid that has appeared for the field of the health vocations and careers. It is intended for use primarily in high schools and junior colleges, by school principals and vocational guidance counselors. It will also certainly be consulted by many students themselves, since it contains concise, factual descriptions of some 156 occupations in health services. Although it does not claim to be comprehensive, it does cover a wide variety of careers, such as laboratory technologist, pharmacist, medical librarian, special therapists, nurse, physician, statistician, administrator, and veterinarian. Prominently displayed are numerous organizations and their addresses, from which additional information is available.

Also included is an all-too-brief section on basic sciences in the health field. This is an excellent introduction to what should be a book as large as the present one devoted entirely to the highly skilled professional and scientific careers in the life sciences, all of which are important in the health field.

Biologists have been slow to realize the need for "promoting" their science at secondary-school levels, despite the fact that today many of our most gifted young people are seeking career guidance while they are in junior- or senior-high schools. More informational material, as well written and as attractively designed as this guidebook on health careers, is needed.

MILTON O. LEE
Federation of American Societies for Experimental Biology

Genetica Medica. Primum Symposium Internationale Geneticae Medicae 6–7 Sept. 1953. Luigi Gedda, Ed. Edizioni dell'Istituto Gregorio Mendel, Rome, 1954. xxiii + 467 pp. Illus. + plates. L. 5.000.

There are two types of international scientific meetings: those that are "international" by virtue of their being sponsored and organized by an internationally recognized agency, and those that receive this qualification from the person who decides to invite to his laboratory a number of colleagues from various countries. The "Primum Symposium Internationale Geneticae Medicae" belongs to the second type; the book under review contains the proceedings of this meeting on medical genetics, held in Rome in 1953.

Of the 12 invited and the 18 contributed papers, presented in the original language, there are a few of considerable interest, such as that by R. Ceppellini on hereditary conditions responsible for urinary excretion of amino acids, and that by A. Franceschetti and D. Klein on the identification of heterozygotes.

In the opening address of Luigi Gedda, the organizer of the symposium, as well as in a short talk by a physiologist, C. Foà, there are polemic remarks claiming that the study of human genetics should be the domain of physicians. Of course, no geneticist would deny the right of medical doctors to devote themselves to human genetics, and, in fact, important contributions to the science of heredity have been made by professional physicians. They, however, should at least take the trouble to learn the proper use of terms, in order not to confuse, for example, inbreeding with backcrossing (p. 13) or chromosome markers with closely linked genes (p. 448).

Th. Dobzhansky [*Science* **118**, 561 (1953)] has already commented on the introductory section of the volume, an allocution of His Holiness Pope Pius XII to the participants in this symposium. It is interesting to note that Gedda has found it necessary to reply to Dobzhansky's criticisms in a footnote to the allocution where it is stated: "In this allocution, the concept of species is taken in the philosophico-biological sense, signifying that one may speak of a new species, when not only the quantitative and qualitative elements, but also at least one ontological element, are different." One would expect from Gedda, the head of the Men of Catholic Action of Italy, a greater respect for the words of His Holiness than is apparent from the sometimes incorrect translations into English, German, and Italian of the allocution, which was originally delivered in French.

ADRIANO A. BUZZATI-TRAVERSO
Scripps Institution of Oceanography

Nuclear Physics. Alex E. S. Green. International Series in Pure and Applied Physics. Leonard I. Schiff, Consulting Ed. McGraw-Hill, New York–London, 1955. xv + 535 pp. Illus. $9.

This book was written primarily as a textbook for a course in nuclear physics for senior or first-year graduate students. Although a knowledge of atomic physics and quantum mechanics has not been assumed, a reader with a background that includes these subjects will probably derive more from the book.

The first two chapters are concerned with relativistic dynamics, a review of