ferring to his predecessors, and—even more unfortunate—without making an attempt to correlate his formulae with any experimental results but his own.

"Photosynthesis is such a complex and heterogeneous process that it is probably impossible to make a complete analysis of its mechanism merely by measuring the rate of the over-all process under different conditions. However, this does not mean that kinetic measurements of photosynthesis are useless; but rather that they are most useful when combined with other biochemical and biophysical methods of approach. . . ."

The section on kinetics first discusses the limitations of the data that are imposed by various methods of measuring the rate of the reaction and the usable incident energy in "white" light. Some general considerations of the influence of external and internal factors on the rate of photosynthesis are followed by detailed chapters on the relation of rate to the concentration of carbon dioxide and of added chemicals that influence the rate of carbon dioxide uptake in plants.

The remainder of the book covers the kinetics with respect to light intensity and wavelength. The present state of the subject of kinetics of photosynthesis is well illustrated by the fact that the quantum yield of the process—apparently a simple bit of fundamental information—has for some years been a controversial issue of intensive investigation. The detailed considerations of both "sides" of this argument in which the results of the contestants differ by a factor of two are clearly and objectively presented. A final chapter on the action spectra of the reaction in leaves, algae, and bacteria brings the book to a close.

Particularly in Volume II, Part 1, the emphasis is upon the relevant and well-established facts of permanent value. The finely spun theories, in which the subject abounds, are neatly described and used to correlate various investigations, but are not allowed to obscure the sound information upon which further progress may be based.

This treatise is in no sense a handbook of laboratory technique, but serves the greater need of drawing the results of thousands of diverse papers together into an organized body of knowledge. The biological and biochemical parts of the subject, rather than being lightly brushed aside, are thoroughly covered and integrated with the physical and physico-chemical data. Let us hope that the completion of this series will not keep the author from continuing his creative organization of the field as it develops in the future.

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Briefly Noted

Semi-Conductors

Appearing under the title *Semi-Conducting Materials,* the *Proceedings* of an international conference held at the University of Reading in Great Britain under the auspices of the International Union of Pure and Applied Physics in cooperation with the Royal Society in July 1950 have recently been published in the United States and England. The conference was organized by R. W. Ditchburn, professor of physics at the University of Reading, and by N. F. Mott, professor of physics at the University of Bristol. It was attended by more than two hundred physicists and engineers interested in recent progress in that branch of solid state physics which deals with semi-conducting materials. The *Proceedings,* which were edited by Conference Secretary H. K. Henisch of the University of Reading, include twenty-seven papers reviewing the physical characteristics and behavior of semi-conductors. A number of scientists from this country attended the conference, many of whom are listed among the contributors to the published *Proceedings.* (281 pp. Academic Press, Inc., New York City, 1951. $6.80.)

Liquids

Table of Dielectric Constants of Pure Liquids, compiled by Arthur A. Maryott and Edgar R. Smith, is part of a program for critical examination of the data of physics and chemistry, sponsored by the National Bureau of Standards in cooperation with the Committee on Tables of Constants and Numerical Data of the National Research Council and the Commission on Tables of Constants of the International Union of Chemistry. In compiling the table, which contains sections on standard liquids, inorganic and organic liquids, and a complete list of references, the authors considered only the low frequency or "static" values. The available literature on more than 800 substances is examined in order to provide "best" values of the dielectric constant and an estimate is represented by a concise function of accuracy for each substance. (NBS Circular 514, 44 pp., U. S. Government Printing Office, Washington 25, D. C. $0.30.)

Solar Energy

Volume 79, No. 4 of the *Proceedings* of the American Academy of Arts and Sciences is a volume of the collected papers presented during the Academy's conference on "The Sun in the Service of Man" in February of last year (145 pp., $2.50). Held under the chairmanship of Harlow Shapley, the conference program included fifteen papers grouped under three major subdivisions: "The Biological Utilization of Solar Energy"; "Sun-Earth Relationships"; and "Survey of Energy Sources, Needs and Utilization". Paul C. Mangelsdorf, Donald H. Menzel, and Karl T. Compton were chairman, respectively, for each of the three sessions. Included among the contributors to this volume are Farrington Daniels, Richard L. Meier, Leo Goldberg, Newbern Smith, Jules Aarons, Richard A. Craig, George Gamow, Eugene Rabinowitch, and Arthur von Hippel. Orders should be addressed to: Committee on Publication, American Academy of Arts and Sciences, 28 Newbury Street, Boston 16, Massachusetts.