Book Reviews

Introduction to chemical thermodynamics. (2nd ed.) Luke E. Steiner. New York-London: McGraw-Hill, 1948. Pp. xiv + 510. $6.00.

This book has been prepared to introduce the subject of chemical thermodynamics, including the fundamental theory and application of the various useful thermodynamic functions to chemical systems. For this second edition a number of sections have been rewritten and new material has been added, including, particularly, expansion of the material on real gases and of the statistical calculation of thermodynamic functions. The author has made a strong effort to bring the text up to date from the standpoint of references to source data in the literature and to existing compilations on chemical thermodynamic properties. Those parts of the first edition, found through teaching experience to lack clarity or logic, have been rewritten. Latest values of the fundamental constants are used.

This book is recommended to those desiring an introduction to thermodynamics.

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The recruitment, selection, and training of social scientists. (Bull. 58.) Elbridge Sibley. New York: Social Science Research Council, 1948. Pp. xv + 163.

To help orient the fellowship policies of the Social Science Research Council, in the face of the shortage of social scientists coincident with the expanding need for their services, Dr. Sibley undertook an analysis of the factors currently affecting the flow of personnel into the field. In his study, as is indicated in the title, problems of recruitment, selection, and training were given careful attention. The fourth component, employment outlook, was deliberately omitted on the assumption that with improvement in the other three aspects, competence, public recognition, and confidence will increase, and opportunities for professional employment will almost automatically improve.

The data utilized permit not only comparisons among the several social science disciplines but also cross-comparison with the natural sciences. Though this report interprets the data with respect to the conditions in the *social* sciences, those specializing in the natural sciences will find much to interest them.

The study of potential and actual recruits to the social sciences is comforting to the extent that it makes clear that not all the ablest members of the academic generation are being drawn away from the social sciences and that, man for man, the best social science graduate students are as bright as the best graduate students in the natural sciences. A warning note is sounded, however, by the larger proportion of those with apparently mediocre and inferior endowment in the social science group, as compared with the natural sciences. The pressure of the mediocre and inferior students apparently has had an undesirable effect on the quality of the training for the better-endowed undergraduate students majoring in the social sciences. The graduate departments in social science are, therefore, forced to begin their training at a level far lower than is done in other graduate science departments. In considering remedies, caution is indicated in the light of the large proportion of social science students who have no interest in careers as scientific researchers—the latter being the group with which Sibley has been most concerned in this study.

We cannot here review the full complement of the findings of this study or the variety of implications discussed. Anyone interested in the continued development of the social sciences should find this report worth reading. For those concerned with the training of future social scientists, it is a must.

EUGENE L. HARTLEY
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A symposium on the use of isotopes in biology and medicine. Madison: Univ. of Wisconsin Press, 1948. Pp. ix + 445. $5.00.

The twenty papers included in this book were presented as a symposium at the University of Wisconsin in September 1947. Nineteen scientists contributed, all of whom are most competent in their specialties. The University of Wisconsin committee, which arranged the symposium, is to be congratulated on the quality of the contributors and on the choice and arrangement of topics.

Hans T. Clarke opens the symposium with a brief account of the history of isotopes in biochemistry. This is followed by a group of 3 papers dealing with ways of obtaining isotopes: the means of separating stable isotopes (Harold C. Urey); the methods of preparing the numerous radioactive ones (Glenn T. Seaborg); and the availability of both stable and radioactive isotopes, particularly those distributed by the Atomic Energy Commission (Paul C. Aebersold). Next follows a group of 3 papers on the assay of isotopes. Alfred O. Nier deals with the detection of stable isotopes, with special reference to the mass spectrometer; Charles D. Coryell reviews the principles of measurement of radioactivity; and Martin D. Kamen describes the application of these principles to the assay of radioisotopes in biological material, with special emphasis on tritium (H^3), short-lived carbon (C^{11}) and long-lived carbon (C^{14}). These authors are followed by Donald B. Melville, who presents important examples of the synthetic procedures used in incorporating tracer atoms into organic molecules.

After the foregoing groups of articles dealing with techniques, there follow 6 reviews of results obtained with tracers: in protein metabolism (David B. Sprinson); in intermediary carbohydrate metabolism (Harland G. Wood); in intermediary metabolism of lipids (Konrad

Bloch); in mineral metabolism (David M. Greenberg); in iodine metabolism and thyroid function (I. L. Chaikoff and A. Taurog); and in general medicine (Joseph G. Hamilton).

Therapeutic applications of radioisotopes are described in two papers by Byron E. Hall (radiophosphorus) and by Saul Hertz (radioactive iodine). Health hazards in the use of radioisotopes are discussed by William F. Bale, primarily from the standpoint of the physicist, and by James J. Nickson from the standpoint of the physician. The book ends with thought-provoking essays by Harold C. Urey, on international aspects of atomic energy, and by Farrington Daniels, on the development and applications of atomic energy.

The book in general is clearly written. Although it was lithoprinted in order to speed production, it is quite legible. Errors are few, and these are concisely listed on a single sheet. The illustrations include photographs of all the contributors and the chairmen of the various sessions.

Although various other works on isotopes in biology have been and are appearing, the authoritative nature of most of the contributions to this book make it a most useful addition to the library of the "isotopic" biologist, particularly if he is interested in tracers.

RAYMOND E. ZIRKLE

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Chymia: annual studies in the history of chemistry. (Edgar F. Smith Memorial Collection: Univ. Pennsylvania, Vol. I.) Tenney L. Davis. (Ed.) Philadelphia: Univ. of Pennsylvania, 1948. Pp. xiv + 190. (Illustrated.) $3.50.

Situated at the University of Pennsylvania is one of the most important collections of rare books, prints, and manuscripts relating to the history of chemistry to be found anywhere in the United States. This collection was originally the private library of the late Edgar Fahs Smith, provost and historian of chemistry at the University. After his death in 1928, Mrs. Smith presented the library to the University, endowing it so that it might grow and flourish. This it has done, as several important collections have since been added to it, thereby enriching its resources.

With the recent publication of *Chymia*, one of Dr. Smith's dreams is brought to fruition, for he had wanted to establish a journal devoted to the history of the science with which his name was so long identified. As stated in the Introduction by Eva V. Armstrong, curator of the Smith Collection, "*Chymia* is intended to promote international scholarship in the history of chemistry, to bring a glimpse of the Edgar Fahs Smith Memorial Collection to those who would drop in for a visit some afternoon if it should be physically convenient to do so, and to provide a meeting ground for those who find pleasure in studies such as it reports." In spirit and in format this first volume of 13 articles admirably embodies the purposes expressed above.

The book opens appropriately enough with the last paper written by the late C. A. Browne (1870–1947), himself a distinguished historian of chemistry, whose library has very recently been added to the Collection. Browne's paper, "Recently acquired information concerning Fredrick Accum, 1769–1838," is a subject on which he had previously written. Claude K. Deischer follows with a memorial tribute to Dr. Browne and concludes with a bibliography of his writings on the history of chemistry—the list of 148 published and 17 unpublished papers speaks for itself. F. Sherwood Taylor transcribes and discusses an English alchemical poem, and Henry M. Leicester tells how Mendeleev promulgated the Periodic Law. Tenney L. Davis, well-known historian of pyrotechnics and editor of *Chymia*, provides an interesting account of the early use of potassium chlorate in the making of fireworks, and George Urdang, historian of pharmacy, writes learnedly and charmingly on the chemical and pharmaceutical history of calomel.

One of the most important contributions is a paper by Sidney M. Edelstein in which is published a hitherto unknown letter by Joseph Priestley. This appears to settle conclusively the famous controversy as to the parts played by Watt, Cavendish, Lavoisier, and Monge in discovering the chemical constituents of water.

It is evident that with this first volume of *Chymia* a new and important medium for the publication of studies in the history of chemistry and related sciences has appeared. May succeeding volumes continue on the high plane of scholarship and readability set by this first offering.

MORRIS C. LEIKIND

Library of Congress, Washington, D.C.

Scientific Book Register

BARNETT, LINCOLN. *The universe and Dr. Einstein.* (With a foreword by Albert Einstein.) New York: William Sloane, 1948. Pp. 127. (Illustrated.) $2.50.

BREMEKAMP, C. E. B. *Notes on the Acanthaceae of Java.* (Nederl. Akad. Wet., Verh. (Tweede Sectie), Dl. XLV, No. 2.) Amsterdam: N. V. Noord-Hollandsche Uitgevers Maatschappij, 1948. Pp. 78.

GODDARD, ROBERT H. (GODDARD, ESTHER C., and PENDRAY, G. EDWARD, Eds.). *Rocket development: liquid-fuel research 1929–1941.* New York: Prentice-Hall, 1948. Pp. xx + 291. (Illustrated.) $6.50.

JOHNSTON, H. F., *et al.* *Magnetic results from Huancayo Observatory, Peru, 1922–1935* and *Magnetic results from Huancayo Observatory, Peru, 1936–1944.* (Vols. X-A and X-B, respectively.) Washington, D. C.: Carnegie Institution, 1948. Vol. X-A: Pp. vi + 609. (Illustrated.) $3.25, paper; $3.75, cloth; Vol. X-B: Pp. v + 385. $2.00, paper; $2.50, cloth.

SNYDER, H. R. (Ed.-in-Chief.) *Organic syntheses.* (Vol. 28.) New York: John Wiley; London: Chapman & Hall, 1948. Pp. vi + 121. (Illustrated.) $2.50.