

however, been omitted from this edition without explanation, and many (though not all) of the earlier footnotes have been left unchanged from the previous format, to confuse the unwary reader. The new plates are photographic reproductions of the originals, but the "increase in faithfulness of reproduction" over the relithographed plates of the 1870-75 edition is offset by a reduction in legibility. A brief preface primarily repeats material from omitted prefaces of the earlier edition, and an index, badly needed in that earlier edition, has been added, but is too perfunctory to aid in a conceptual analysis of Rumford's work.

Given the difficulty of obtaining a copy of the 1870-75 edition, it is almost invidious to complain of this solution to the problem. Nonetheless, one cannot help mourning what appears to be a lost opportunity. What were, as measured against modern standards for the history of science, defects in the earlier version are not corrected in this reprinting. Previous inconsistencies in the chronological grouping of papers are not improved by the substitution of a consistent topical arrangement which separates chronologically congruent papers on such related topics as light, chemistry, and heat. Many of the papers of the earlier edition were, in effect, entirely new versions artificially created by putting together from Rumford's English, French, or German renderings of his papers those portions thought by the previous editors to be the most mature statements of his position. Even with a complete bibliographical description of sources, republication of such papers does not reliably represent Rumford's work.

What was needed was in fact a completely new edition of all of Rumford's work, edited in compliance with the latest scholarly standards. The editor of this reprinted edition, Sanborn Brown, is noted for his recent studies of the life and work of Rumford. To join this man and this occasion only to reproduce the results of outmoded scholarship is a waste of resources which, moreover, will likely have a long-term effect in forestalling the appearance of any competing edition. Must it now be nearly another century before the substantial and scholarly edition worthy of Rumford can be published?

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Xenobiotics

The Biochemistry of Foreign Compounds. DENNIS V. PARKE. Pergamon, New York, 1968. x + 274 pp., illus. \$10. International Series of Monographs in Pure and Applied Biology: Biochemistry Division, vol. 5.

This book is in part an updating of R. T. Williams' classic monograph *Detoxication Mechanisms*, which was published in 1959. The latter dealt almost solely with the chemical fate of xenobiotics following their administration to animals. Accordingly, a significant amount of space in Parke's book is allotted to a qualitative and quantitative treatment of the biological fate of drugs, pesticides, food additives, and industrial chemicals. It is not, however, nor was it intended to be, as encyclopedic in this regard as *Detoxication Mechanisms*.

The book offers a somewhat novel and refreshing approach to the problem of biological fate in that it does not limit itself to the chemical forms and relative amounts in which foreign compounds are excreted from the animal body, but attempts to describe the total biological handling of foreign compounds from their entrance into to their departure from animal organisms. Thus, general principles of absorption, penetration across various biomembranes, tissue distribution and localization, and routes of excretion are briefly outlined. The central role of hepatic microsomal enzymes in the chemical alteration of foreign compounds and the physiological factors known to affect their activity each receive a chapter's attention.

The major deficiency of this book is that Parke's desire to be concise exposes him to the dangers of superficiality. For example, the effect of protein binding on the renal clearance of foreign compounds receives only four lines in the text, and, considering the information currently available, the cytological origins and chemical composition of hepatic microsomes and the role of microsomal electron transport and cytochrome P-450 in the mechanism of drug metabolism receive rather scanty attention.

However, for the novice in the field, Parke's book should serve as a useful compendium of information about several related but, for some reason, systematically segregated areas which have heretofore been covered only in scattered review articles.

Investigators working actively in the field might also find the work useful

as a brief review. The latter group, however, should probably be apprised of another recently published work, *Principles of Drug Action*, by A. Goldstein, L. Aronow, and S. M. Kaplan (Harper and Row, New York, 1968, \$18.50). This book, which covers many of the same areas as Parke's, although with a slightly different orientation, is more inclusive, more detailed, and more sophisticated in its analyses and discussions.

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Excited Gas

Active Nitrogen. A. NELSON WRIGHT and CARL A. WINKLER. Academic Press, New York, 1968. xii + 602 pp., illus. \$27.50. Physical Chemistry Series.

It may seem that such an apparently simple and circumscribed topic as the phenomena that occur in pure gaseous nitrogen subsequent to its excitation by an electrical discharge could hardly fill a book of 602 pages; even if the subject of active nitrogen could be clarified by such an exposition, does this specific topic deserve an elaborate clarification? The unfortunate but just answer is—it depends.

An extensive discussion of active nitrogen is justified if this phenomenon is presented as a specific example of the general phenomena of chemiluminescence, chemionization, energy transfer in collisions as well as energy migration within molecules, and the role of internal energy of reactants in a chemical reaction and the relationship of the internal states of products of chemical reactions to the internal states of the reactants.

The book *Active Nitrogen* by Wright and Winkler constitutes the necessary working papers for the preparation of the book envisioned in the previous paragraph. It is a very large and necessary amassing and cataloguing of previous results which will be of great value to researchers. However, the book is noncritical (and consequently nonselective) and seldom embeds observations in a general context. There is very little clarification of the phenomena associated with active nitrogen. More serious, there is little general discussion linking observational material with mechanistic deductions.

The bibliography of 1529 items in-