if the social environment is enriched at an early enough chronological age, the appropriate age can be speedily achieved. Inasmuch as language profoundly shapes the child's perception of his environment and influences his self-regulatory activities, the issue is an important one.

In a work of this scope, it is inevitable that specialists will find some shortcomings and oversimplifications. The non-aphasic changes in language occurring after brain injury could have been more adequately handled. The data on the electrophysiological correlates of development date from the '30's and '40's and are not precise enough to be used in the fashion in which Lenneberg employs them. The consideration of the differences between the speech of lower-class and that of middle-class children only touches on an important subject which is germane to relationships of biological and social factors. On the whole, the book is excellent. It is well written and organized, and the appendices by Chomsky on generative grammar and Marx on historical aspects are useful. It should be read by anyone interested in language and child development.

EDWIN A. WEINSTEIN
Washington School of Psychiatry, Washington, D.C.

Phosphorus and Its Compounds

Topics in Phosphorus Chemistry. Vol. 4. MARTIN GRAYSON and EDWARD J. GRIFFITH, Eds. Interscience (Wiley), New York, 1967. 537 pp., illus. $25.

The fourth volume of this infant series is a lusty one both as to size and price. Returning to a format similar to that of the first volume, the present one contains six sections.

"The structures and reactions of cyclopolyphosphines," by A. H. Cowley and R. P. Pinnell, covers the chemistry of compounds containing a cycle of phosphorus atoms. These compounds, discovered in the 19th century by Michaelis, remained *in obscura* for nearly a century and are now undergoing a revival owing to the clear need for better understanding of the chemistry of phosphorus as the element, a form in which these cyclic structures exist naturally. The chapter describes the appropriate chemistry but does not go into the more imaginative and spectacular transition states postulated by some for the various reactions. The authors' restraint in this matter is only to be applauded, in my opinion. "The natural occurrence of compounds with the carbon-phosphorus bond," by L. D. Quin, gives a surprisingly extensive literature coverage and discussion of 2-aminoethylphosphonic acid and related substances that occur in some living organisms. While these compounds are "freaks" and are components of not more than a handful of biological forms, their very existence in natural state of life is one of the most challenging and curious aspects of biochemistry of phosphorus; it surely gives a further support to the idea of chemical individuality of living species. In "Photochemical and radiation-induced reactions of phosphorus compounds," M. Halmann discusses at length the radiation-induced chemistry of various compounds of phosphorus. It is significant that most of the 100-odd references deal with information less than ten years old. The summary of mass-spectrometric study of phosphorus compounds should be of general interest to chemists working with phosphorus compounds. The title of D. S. Payne's paper, "The chemistry of phosphorus halides," is a misnomer by the author's own admission; it omits the fluorides of phosphorus, which are probably the most numerous halides of the lot. It attempts to give an encyclopedic coverage of synthesis and reactions of the halides of phosphorus with various states of oxidation of the latter. Inorganic chemistry is clearly more detailed than is organic chemistry in this chapter. Organic chemists are likely to be disappointed by the dismissal of points of interest to them.

"Progress in the chemistry of fertilizer and soil phosphorus," by G. E. G. Mattingly and O. Talibudeen, is a chapter of a type that is new to this series and one that should be welcomed. It makes up a large part of the book, describing in some detail the recent progress in the manufacture and the chemistry of phosphorus fertilizers, and outlining the progress made in recent years in the area of soil chemistry of phosphorus. While much of this material is descriptive in nature, and unavoidably so, one cannot forget that it is the manufacturing profit in making just such chemicals that has made possible much of the exploration of the exotic and sophisticated chemistry of phosphorus that occupied many pages in chemical journals in recent years. Lest this chapter be scorned by some in our profession, I wish to point out that a better understanding of utilization of the chemistry discussed in this chapter can well lead to an alteration in the nutritional balance in much of this world of ours; surely that is not a goal to be despised.

"Phosphorus-nitrogen chemistry," by E. Fluck, deals with the bulky topic of nitrogen-bound phosphorus compounds, linear and cyclic in structure, organic and inorganic in composition. The longest chapter in the book, it is not very well digested, and one must struggle line by line through the English-German language in which it is composed. The use of Arabic numerals for tagging the formulas is an inconvenience to the reader, for the numerals bear too much similarity to those denoting equations and literature references.

The book is well recommended to phosphorus chemists. I am sure that the various research grants that support the bulk of research in this branch of chemistry can be made to accommodate its price.

G. M. KOSOLAPOFF
Auburn University, Auburn, Alabama

Men at Work

Scientists in Organizations. Productive Climates for Research and Development. DONALD C. PELZ and FRANK M. ANDREWS. Wiley, New York, 1966. 332 pp., illus. $10.

The authors have addressed this book to scientists, engineers, and research administrators; the presentation suggests, however, that it was written for social scientists, particularly for those who do not mind wading through thickets of correlation tables, intricate graphs, and sample questionnaires to harvest a scanty offering of theories and useful concepts. The study is a testament to what can be done with government funds, survey methodology, and a computer if one wants to collect and manipulate data that may be relevant to an interesting problem. Certainly a great deal of activity can be generated and much time can be spent in such an enterprise.