

Science and the Nation

Policy and Politics. By J. Stefan Dupré and Sanford A. Lakoff. (Spectrum Book.) Pp. x+181. (Prentice-Hall, Inc., Englewood Cliffs, N.J., and London, 1962.) 16s.

PROF. J. S. DUPRÉ and Prof. S. A. Lakoff's readable study of the relations between science and the Government in the United States is a natural supplement or continuum of A. H. Dupré's *Science in the Federal Government*, which outlines the development of those relations up to 1940 where the present volume takes up the story. It is equally a counterpart to D. K. Price's *Government and Science*, though essentially it indicates and illustrates the problems rather than analyses them in detail or in depth. In the first part, the authors outline briefly the changes in the relations between Government and science, both in industry and in the universities, which have taken place in the United States during the past twenty years and some of the implications of those changes, notably of the development of extramural Government research. Further, the contribution which scientists have made to the formulation of policy is described in a way which assists the British reader to appreciate the significance of characteristic features of the American system, such as the position of the President's Special Assistant for Science and Technology, the President's Science Advisory Committee, or the Advanced Research Projects Agency, in a British context.

In the second part of the book the authors outline lucidly the part which scientists have played in the political scene from the general issue of defence, the development of the atomic bomb and nuclear warfare, and the issues of security, responsibility and decision which arise. The nature of politics and the process of decision could have been a little more clearly displayed. However, the book makes abundantly clear two points to which Dr. J. R. Killian, jun., refers in a foreword: the extent to which the interface between science and political science should repay study from both sides; and the imperative need for public understanding of what is to-day involved in the relations between science and Government. If such study yields constructive results in the way of new methods or institutions, if the difficult and changing problems of organization are solved, those methods and institutions will not be used, nor those solutions applied if political prejudice or dogma are allowed, in default of public understanding, to bar the way. [See also p. 629 of this issue of *Nature*.]

Progress in Inorganic Chemistry

Vol. 3. Edited by F. Albert Cotton. Pp. 551. (London and New York: Interscience Publishers, a division of John Wiley and Sons, 1962.) 113s.

THIS volume maintains the high standards of its predecessors. Hydrothermal synthesis of crystals is discussed in some detail by Laudise in an interesting article in which I was surprised to learn that sapphires may be grown hydrothermally. The degree of 'Americanization' in this particular article is unfortunate: "criteria . . . must be compromised"; "validation of . . . data"; "methods . . . categorized"; "unsystematized field", and the very prevalent "iron-containing compounds" when "compounds containing iron" would be so much clearer to anyone not familiar with the language.

There are two very long articles—one on vinyl compounds of metals by Seyferth running to nearly 500 references, and one on primary solid hydrides by Gibb. In the latter case not many conclusions were evident. Liehr has a fairly brief chapter on vibronically coupled inorganic systems, where it is clear that the author is under the impression that it is written down to the level of the average inorganic chemist. Unfortunately, this is not true. Those who struggle through may find the statement about the "rigorous crystalline field solution . . . here pictorially discussed" a little depressing.

The difficulty of theoreticians to appreciate how far behind many inorganic chemists still remain does not help the keen laggards to catch up. Perhaps *Progress in Inorganic Chemistry* will be able to produce chapters on group theory and crystal field theory, for example, to lay some foundation for these chemists. The last review is on high-temperature inorganic chemistry by Searcy, who defines high temperature as "any temperature at which entropy plays a significant role in determining the reaction equilibria of interest". This is a fascinating article, particularly where dissociation energies of dimers of the elements are discussed in terms of multiple bonding and the anomalously low single bond energies for N-N and O-O. So much present-day inorganic chemistry is concerned with co-ordination compounds that this review is a refreshing change.

The general standard of presentation in this series is high, and there are few errors. I. R. BEATTIE

The Chemistry and Technology of Leather

Edited by Fred O'Flaherty, William T. Roddy and Robert M. Lollar. Vol. 3: Process Control of Leather Quality. (American Chemical Society Monograph Series, No. 134.) Pp. ix + 518. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1962.) 120s. net.

THIS third volume in the authoritative series on leather technology maintains the high standard of its predecessors. Full descriptions of tanner dye application, dyeing mechanism and chemistry of fat-liquoring emulsions are given as well as a discussion of the application of organic solvents for tannery practice. For the specialist there are separate sections on modern procedures for treatment of calfskin and other leathers such as industrial, glove and novelty leathers.

The text is well illustrated by photographs and the bibliography is exhaustive. It is unfortunate that in an otherwise excellent production the indexing is inadequate, but the work (which will be complete with the issue of Volume 4) is an essential part of the library of the leather technologist. A. I. SCOTT

Missile Guidance (Temple Press Monographs on Rockets and Missiles)

By J. Clemow. Pp. vii+87. (London: Temple Press Books, 1962.) 15s.

THIS book is one of a series, covering all aspects of guided weapons, intended to be a concise and authoritative introduction to the subject. The present volume discusses fundamental principles and the effects of mechanical imperfections in beam-riding, homing and command control systems; inertia navigation and other forms of long-range weapon guidance are to be treated in a later monograph. The author has been engaged in research and development of guided weapons systems for many years and has been responsible for Services text-books on this topic. It is a great pity, therefore, that the present work contains a large number of typographical errors, apparently due to too much haste in writing and in correcting proofs. These are not at all serious in themselves, but they interrupt the flow of the arguments presented.

Apart from this, the material is well arranged and a nice balance is maintained between the exposition of theory and descriptions of equipment, especially in the sections on beam-riding and homing. The particular choice of subject-matter is ideally suited to the needs of the young engineer or scientist just entered on work involving the study and analysis of guidance systems, and thus requiring a relatively brief but balanced explanation of the technology as a whole. For this reason it would probably be helpful if the bibliography were extended to include some of the text-books covering the same field. G. J. HERRING