Many tricks used by humans, involving the processing of names of dimensions and values and yielding what Bruner, Goodnow, and Austin call "relational concepts," will need more sophisticated modes of description. It can be expected that the present book will arouse interest and direct activity in these directions. This will be greatly facilitated by the fact that in an appendix the authors present exact descriptions of their algorithms in a precise but simple computer-independent language (the "Iverson language"). The authors are to be commended for their appreciation of the problem of communication between programmers and for coming out with an acceptable solution, building, in the process, one bridge over the gap between psychologists and computer scientists.

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Uncharted Territory

Vegetation Mapping. A. W. KUCHLER. Ronald, New York, 1967. 478 pp., illus. $15.

The high-quality vegetation maps available in France, Austria, Germany, and Russia are both useful and impressive. Such detail, so important for much biological-planning work, is rarely at hand in this country. It is gratifying, therefore, to see a new American book devoted to the subject which not only details the ecological basis, technical aspects, and various methods of vegetation mapping, but also emphasizes the need for it and explains its possible applications. The same author gave us a most welcome small-scale vegetation map of the U.S. in 1964, with an equally valuable explanation. One hopes that these sparks will impel us to begin to match the vegetation mapping now under way in much of Europe.

Longer than Ellenberg's excellent *Aufgaben und Methoden der Vegetationskunde* (1956), the book goes a great deal further (and in English) in discussing the importance of ecology to mapping, the importance of thinking through in advance the technical problems of mapping, and the various (climatic, physiognomic, floristic, and "comprehensive") approaches. The book contains practical ideas: on maintaining uniformity in procedure yet finding original solutions for the problems peculiar to a particular area; on choosing the proper scale; on using color to maximize ecological-climatic land-use information; and on the merits and weaknesses of systems now in use. It offers an explanation of the superb Gaussen system and a fine discussion on the values of such maps to land managers and planners.

The book is hardly flawless: it is wordy and repetitious and written in parts as though for a high school audience; it is overly preoccupied with climate and with European ecology; and it does not clearly explain "potential natural vegetation." More serious, it says nothing about vegetation maps prepared from the General Land Office Survey notes of the first surveyors; many such maps (for example those by Vestal, Kenoyer, Potzger) portray in considerable detail presettlement and hence "original" vegetation distribution. But the flaws, though not unimportant, pale before the potential usefulness of the book. The analysis of maps and techniques from all over the world (of the 552 bibliographic references, 332 are in foreign languages) is a significant contribution in itself. With this book to provide methodological order, it is possible that the affluent society will produce vegetation maps as good as its road, topographic, soil, and geologic ones and that the eco-bio-geo-cenologist-planner need not always peer hopelessly at the grey stippling of his aerial photographs, wishing he could see beneath.

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Chemistry of Earth Metals

Peroxides, Superoxides, and Ozonides of Alkali and Alkaline Earth Metals. IL'YA IVANOVICH VOL'NOV. Translated from the Russian edition (Moscow, 1964) by J. Woroncow. A. W. Petrocelli, Translation Ed. Plenum Press, New York, 1966. 160 pp., illus. $9.

For a comment on the contents of this work, it would be difficult to improve on two paragraphs taken from Petrocelli's preface to the translated edition:

> Professor Vol'nov is eminently qualified to write this monograph since for many years he has been a leading investigator and prolific writer in the field of peroxide, superoxide, and ozonide chemistry. He has succeeded in presenting a lucid and detailed discussion of past work, the present state, and the future potential of this area of unfamiliar oxidation state chemistry.
>
> Of particular interest is Professor Vol'nov's extensive compilation of available thermodynamic, kinetic, and structural data for the alkali and alkaline earth peroxides, superoxides, and ozonides. In addition, he has reviewed the known methods of synthesis, as well as the practical applications for which these compounds are suited.

The volume is an organized publication of the articles by Vol'nov and coworkers, with logical additions of the work of others in appropriate areas. The chemistry of the compounds is well done and well referenced. The references given are a valuable part of the work, and while Vol'nov's preface indicates they will be limited to those from 1950–1962, many older references are included. On the other hand, a milestone in superoxide development, the work of C. A. Kraus and students in this country, is not referenced.

Chemists interested in the mechanism of oxidation and oxidation states of the alkali and alkaline earth metals cannot afford to overlook this work. The picture the author paints of development chemistry, costs of products, and applications is not, however, as complete as he is capable of producing. The research and development chemistry is shown to be heavily Russian, while the costs of products and applications are given for countries other than Russia. The commercial uses of oxycompounds in Russia cannot be so generally known as to be uninteresting to Russian readers, and an account of them certainly would have been a welcome addition to the translated work. If applications for superoxides do not exist in Russia, then nearly a million pounds of KO_2 powder forwarded under lend-lease (1942–45) from this country could have created a stowage problem.

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High-Pressure Phenomena

Advances in High Pressure Research. Vol. 1. R. S. BRADLEY, Ed. Academic Press, New York, 1966. 406 pp., illus. $16.

This series of which R. S. Bradley is editor should serve as a supplement to his recent work *High Pressure Physics and Chemistry*. It is planned that volumes in the series will appear at intervals of a few years and will deal