BOOK REVIEWS

TRACE ELEMENT PROBLEMS IN NATURE
Edited by K. H. Schütte, University of Cape Town, Department of Botany, Cape Town, South Africa. 56 pp. 1959.
This is a report of a special symposium held in the Botany Department, University of Cape Town, in May, 1958. It is a small booklet of 54 pages with the following chapters:

- Trace Elements in Nature, by Dr. K. H. Schütte
- Trace Elements in Soils, by Dr. S. S. Amineke
- Trace Elements in Plants, by Dr. W. A. Roach
- Trace Elements in Man and Animals, by Prof. J. F. Brock

The editor of the booklet was Dr. K. H. Schütte. This symposium arose largely from the enthusiasm of Dr. Schütte and was necessary because of the small numbers of scientific personnel widely scattered over a large area.

The papers are somewhat general, but contain many specific details, particularly concerning trace element deficiencies. Of particular interest is the fact that it is calculated that about 80% of the arable land in South Africa bears crops deficient in at least one trace element. These zones are very scattered and are found in all climatic areas. The papers are very easy to read, informative and give a good clear picture of the trace element status of soils, plants and animals in Africa.—K. C. Berger, University of Wisconsin.

GRASSLANDS

The purpose of this book is to publish 37 of the papers presented in Section O of the American Association for the Advancement of Science meeting held in 1956 at New York.

These papers deal with the symposium concerned with the review of current knowledge as it relates to the development of the nation's grasslands. They were prepared by well-known authorities on the various aspects of forages, from plant breeding to utilization.

The editor has divided the material into eight major subject matter headings; namely, science in grassland research; production in the temperate humid regions; engineering; utilization and nutrition problems; evaluation of the nutritive significance; climatology; ecology; and range management. Each section contains four or more articles which serve to reflect the latest knowledge in the many facets relating to the development, use and management of grasses and legumes for forage production.

Since the information covers many phases in use and management of forages the book should be of interest to specialists and agriculturists in a number of technical fields. Of particular interest to soil scientists are articles concerning the role of climate and soils as they affect forages. In the article entitled: "The Climatic Environment of Grassland," the author presents a good resume of how climate has affected the development of grasslands and what man has done to establish grasses in unfavorable environments. The importance of the soil in relation to vegetation in present and future research and surveys for the management of western ranges is discussed in one of the papers included in the Range Management Section. There are other papers of equal interest, and agronomists, soil scientists, and livestock men should be interested in this book, as it is a source of good information as reference on many occasions.—B. D. Blakey, Soil Conservation Service, Washington, D. C.

POTASH SYMPOSIUM, 1957

This is a series of papers on the role of potassium in forage plant production given at Vienna under the chairmanship of Prof. Dr. L. M. Kopecs. These papers were presented by European authorities and hence provide a good opportunity to become better acquainted with the thinking of these scientists. Considerable stress is placed on the effect of potassium on the species composition and quality of the forage.

The titles of the papers are as follows: The study of plant associations in grassland with respect to planning of farm production; The use and misuse of potassic fertilizer applications on grassland; Influence of potassic applications on the status and the botanical composition of grassland; Influence of potassium fertilization on the chemical composition and the nutritive value of herbage crops; Influence of potassic fertilizer on annual production from pasture; On the potassium nutrition of cut and grazed grassland; The use of potassic fertilizers on grassland in temperate humid regions; Potassium fertilization on grassland in alpine and subalpine regions; Potassic fertilization of grassland in the Mediterranean region; Potassium fertilization of irrigated grassland under intensive cultivation; The basis of Austrian agriculture in relation to the use of fertilizers; Potassium supply of Austrian soils and soil analysis in Austria; Fertilizer applications and crop rotations; The Austrian Fertilizer Advisory Department—a new form of fertilizer advisory service. Two of the papers are in English and summaries of all papers are given in four languages, including English.—Weinan L. Nelson, American Potash Inst., Lafayette, Ind.

THE SEQUESTRATION OF METALS

This book is not addressed to those carrying out research work in the field of coordination chemistry. Rather it is directed toward users of the so-called sequestering agents, particularly persons for whom these agents are a tool, such as in analytical procedures, industrial processes, biological preparations, agricultural uses, foodstuff and beverage uses, and others. To this end discussions such as those that refer to quantum mechanics are kept to a bare minimum. The book is remarkably readable to those not recently trained in organic and physical chemistry. It begins with a definition of sequestration as an applied process rather than a matter of theoretical chemistry, but then the author proceeds to justify his stand in a discussion of a wide variety of chemicals, all of which have the ability to suppress reactions or formation of a metal without removal of the metal from the system or phase and without concentrating the metal in any particular portion of the phase. Some, but not all, of these chemicals can be described as "chelating agents" but all are sequestering agents by his definition. Very interesting chapters on valency and basicity, the chelate ring and the influence of ligand and metal on strength of the bond, stability of chelates and competition in chelate systems, and chemical and physical properties of sequestering agents are included. The discussion on applications in agriculture although good fails to point out significant advancements since 1957. There have not been a great number, however. A survey of analytical uses is extremely well documented as are the other portions of the book. Analytical determinations of metals by direct and indirect means and of nonmetals are discussed. Analytical uses of sequestering agents include gravimetric, volumetric, colorimetric, polarographic, various electric, and many other techniques. A chapter on applications in biology other than agriculture is brief but most interesting. It concerns medical uses and interactions with enzymes. The book concludes with a section on future developments. The question is raised concerning the large number of other sequestering chemicals some of which may be not unknown that may have important uses. Among the list of proposed topics for intensive future research is the relationship of coordination to catalytic effects of metals, indeed an item of utmost importance in biology and agriculture.—A. Wallace, University of California, Los Angeles.

MENTION
How to Identify and Name Soils
By R. Earl Storie, Associated Students Store, University of California, Berkeley 4, Calif. 55 pp. 39 fig. $1.00. 1959.

This tells how to use the Scorecard for Identifying and Naming Soils which is being used by the California State Soil Conservation Service. The Scorecard describes the 21 soil and land properties listed on the Scorecard, including the measurement and classification of each. There is a listing of illustrative material used in soil identification study, material on land classification, and a listing of selected references. The Scorecard is designed to aid students and others interested in soil identification and soil classification, and classifying the soil at a particular site. Although designed to be used primarily in California, this pamphlet and Scorecard will be useful in other areas as a teaching aid.