

## Book Reviews

**Advances in Agronomy.** vol. 9. A. G. Norman, Ed. Academic Press, New York, 1957. xi + 308 pp. \$8.

This is the ninth volume in this series, all under the able editorship of A. G. Norman. This volume, like its predecessors, constitutes a valuable contribution to the literature in this highly varied field. In contrast to some of the series of "Advances" in other disciplines, *Advances in Agronomy* shows relatively little duplication in topics covered by successive volumes. A glance at the contents of this volume gives ample evidence of the reason for this policy. In a science encompassing the chemistry of zinc in soils along with defoliation and desiccation as harvest aids, a complete review of the annual progress of every segment of the field would not be possible in one book.

Like any other book with many different authors, this volume contains a wide variation in type of article, but in general the authors of the several chapters have written in scholarly fashion.

This volume contains the following chapters: "Agricultural trends in the old cotton belt," by R. W. Pearson and J. H. Yeager; "Zinc deficiency and its control," by Wynne Thorne; "Defoliation and desiccation: Harvest aid practices," by Frederick T. Addicott and Ruth S. Lynch; "The fixation of phosphorus by soils," by John B. Hemwall; "The lespedezas," by Paul R. Henson, Joe D. Baldrige, and Will A. Cope; "Measurement of soil bulk density and penetrability," by J. A. Vomocil; "The contribution of statistics to agronomy," by Oscar Kempthorne; "The residual effects of fertilizer," by R. L. Cook and J. F. Davis; and "The concept of braunerde (brown forest soil) in Europe and the United States," by R. Tavernier and G. D. Smith.

Thorne's chapter on zinc deficiency should be of great value to workers in areas where this problem is just being recognized. Foresters will find the article on the brown forest soils useful in any attempt to relate the European forestry literature to American experiences. The chapter on the lespedezas provides a valu-

able record of the current status of knowledge concerning this group of plants and also provides an excellent background for further management and breeding work with them.

While few agronomists will read this book from cover to cover, a great many will find one or more of its chapters of sufficient value to justify publication of the book.

W. H. ALLAWAY  
*Agricultural Research Service,  
Beltsville, Maryland*

**Mechanical Resolution of Linguistic Problems.** Andrew D. Booth, L. Brandwood, J. P. Cleave. Academic Press, New York; Butterworths, London, 1958. vii + 306 pp. Illus. \$9.80.

This is the second book to appear in the relatively new field of mechanical translation. The first, *Machine Translation of Languages*, a book of essays edited by Locke and Booth, covered the subject as of three years ago. Since that time, more work has been done than during the preceding six to nine years; the number of abstracts appearing in the journal *Mechanical Translation* now stands at 121, and they numbered only 55 three years ago.

One should not expect to find in this book, however, a more up-to-date survey of the thinking on mechanical translation. It is, instead, a presentation of some of the work done in but one of a dozen or so groups around the world—that is, in the Birkbeck College (University of London) group under Booth, a pioneer in the field. The book does contain a historical introduction, but it is disappointing to discover that this starts with a rewritten and somewhat abbreviated version of the historical introduction of Locke and Booth, followed by three paragraphs on the subsequent work at Birkbeck College and only two paragraphs reporting some (but ignoring most) of the subsequent work done elsewhere. Besides mechanical translation, the book reports work in the fields of word counting, concordance making, and

the statistical analysis of style, which are even less adequately treated than the earlier history.

The new work reported in chapter 8 (presumably by Brandwood) on the mechanical translation of German represents over half of the book and is required reading for all serious workers in the field. This work is entirely within the spirit of the early work of Oswald and Fletcher [*Mod. Language Forum* 36, 1 (1951)], which is but one of the several current approaches to the problems of mechanical translation. Brandwood's work constitutes a careful examination and criticism of the proposals of Oswald and Fletcher, with a number of good suggestions for improvements and additions, but it does not pretend to be a scheme for mechanical translation. Perhaps the field has not yet advanced far enough for this.

The other, slightly smaller, half of the book consists of 11 chapters containing work most of which has been published elsewhere. Early chapters present elementary descriptions of punched-card equipment and of Booth's computer, APEXC, and briefly explain how a computer may be used for counting words or for making concordances, both rather easy to programme. A number of suggestions appear on how a computer may be used to examine texts and to compile statistics that may be useful in deciding, for example, what is the chronological order of the *Dialogues* of Plato. Adequate references to the literature are supplied for the Plato problem. The description of the Birkbeck approach to mechanical translation and how it may be programmed brings together previously scattered material. A big point is made of the binary or "twenty questions" approach to table look-up routines—an approach that seems to have been common practice among programmers on this side of the Atlantic as early as 1953.

There is a chapter (probably by Cleave) on how to programme a computer to convert ordinary spelling into the peculiar contractions of Braille, a chapter on French mechanical translation (presumably by Brandwood), and one which is a condensation of one of the reports from a group in Russia. A cogent argument appears against the oft-repeated suggestion that translating between a number of languages be done by way of an artificial machine "interlingua." The book ends with a description of a machine that, in theory, would be better suited for mechanical translation work than some of the existing machines.

VICTOR H. YNGVE  
*Department of Modern Languages and  
Research Laboratory of Electronics,  
Massachusetts Institute of Technology*