plants are used extensively for soil conservation and soil improving purposes this could well have been expanded.

The discussion of grassland farming points up the need for such a system but cites the lack of economic data on this subject.

The damaging as well as the helpful insects are discussed. Some of the major diseases of forage crops are also mentioned.

The importance of the production of adequate quantities of good forage crop seed is considered, and the centers of production, cultural methods, seed yields and methods of harvest of some of the crops are reviewed.

All of the details concerning all of the forage crops adapted for use in the various sections of the United States cannot be discussed in one publication, however, this book is more up-to-date than most and it also contains a good list of references at the conclusion of each chapter.

The author has prepared a book that is a very good reference on most of the important forage crops. Its most valuable and most extensive use will no doubt be for classroom work; however, it should also prove to be of value to the agricultural worker—W. M. Nixon, Soil Conservation Service, Fort Worth, Texas.

Selenium

By Sam F. Trelease (Columbia University), and O. A. Beath (University of Wyoming). 292 pages, 61 figs. 43 tables—published by the authors. 1949. $5.50

Two university professors have combined their talents and years of research to produce a thorough treatise on a western problem of interest to a wide group, no segment of which have they neglected. As told in the book's subtitle selenium is studied not only as to its geological occurrence but as to its biological effects in relation to botany, chemistry, agriculture, nutrition, and medicine. The paths of selenium from the soils, through the plants, and into the animals, is followed in detail and thoroughly documented with 287 references. Of particular interest to many range operators is the chapter on prevention and control of selenium poisoning. Although only 750 copies were printed, the book will reach and serve a wide audience from reference shelves for many years.—Alan A. Beetle, Dept. of Range Management, University of Wyoming, Laramie, Wyoming.

Woody-Plant Seed Manual


This manual presents information on all phases of seed handling to guide Conservationists in effective and economical seed and revegetation practices with woody plants. It is based on laboratory tests and the field work and practices of various government agencies for over 20 years.

Reliable information on seed handling is needed by those engaged in revegetation, from the rancher interested in increasing palatable shrubs on his range to public action agencies engaged in large scale revegetation for erosion control and watershed protection, wildlife food and cover, shelter belts, roadside plantings and timber production. This book supplies that information with new and complete coverage of the various phases of seed handling from the formation of the seed to sowing.

A complete study of the seed makes up Part I. Flower parts and their function
in seed formation are reviewed since this knowledge is essential for the seed collector to avoid overestimating the size of a potential seed crop during the blossoming period. Production and dispersal of seeds are discussed in relation to estimating seed crops and to successful seed collecting. Seed source is stressed as second in importance only to choice of species in revegetation practice.

Conservationists will wish to read carefully the chapters on collecting, extracting, cleaning and storing seeds. Seed dormancy in species of present or potential value for conservation planting are outlined to challenge further research. Since the cost of seeds or seedlings is a limiting factor in large scale revegetation a practical formula is presented for determining cost of seedlings.

The importance of correctly interpreting seed tests is emphasized, since laboratory germination is almost always higher than that in the nursery. A formula is given to compute the correct rate of nursery sowing needed to produce stands of a given density.

Part II provides information for 444 species and varieties of trees and shrubs, presented by genera arranged alphabetically by scientific name. The text provides relatively detailed but concise information on distribution and use, seeding habits, collection, extraction, storage and germination of seeds, nursery and field practice.

A Use List gives groups of species suitable for (1) Wood Production, including wood products, (2) Erosion Control, (3) Shelter Belts, (4) Wildlife Purposes, (5) Ornamental Planting. Many of the Wildlife plants are suitable for livestock grazing, but the authors missed a bet in not assembling a separate range grazing list.

Conservationists will welcome this guide in harvesting, cleaning and storing seeds, since the success of revegetation projects depends upon their skill in seed handling. The disappointment of waiting a year or more for seeds to germinate, and the uncertainty of previous trial and error methods may be avoided by following the practices described.

Range seeding work, either by accident or design, has largely neglected the browse species, although Van Dersal's "Native Woody Plants of the United States" does give some helpful information on seeding. This new manual is an important step in organizing the woody-plant seed enterprise on a sound and scientific basis.—Imogene F. Campbell, New Orleans, La.