COMMON CULTIVATED CROPS OF SOUTH INDIA
By V. T. Subbiah Mudaliar, Madras. Amudha. Nilayam
Private Limited. 606 pp. 1956. 15 Rupees.

Making use of his rich experience gained in over 30 years as an executive officer in the Madras Department of Agriculture and as Professor of Agriculture in the Agricultural College at Coimbatore and Bapatda, the author has produced a book which contains a wealth of information on the principal food, fodder, and commercial crops of South India.

Beginning with a general discussion of the soils and climate of South India, succeeding introductory chapters deal with soil fertility, tillage, irrigation and crop classification. The main body of the book deals with an interesting and detailed description of the practices followed in the growing, harvesting, storing, and utilizing eleven cereals; nine pulses; six oil seed crops; seven miscellaneous food crops, including banana, tapioca, sweet potato, white potato, elephant-foot yam, colocasia, and yams; sugar cane; seven condiments and spices; eight fiber crops; two narcotics; several green manuring crops; and crops used especially for pasture and forage.

The Madras and Andhra States, comprising South India, represent seven distinct climatic zones each of which has its own pattern of cropping. For instance, the author describes ten different methods of growing rice and four ways to prepare the land for sowing sorghum. Plowing is done in most areas by use of the wooden country plow drawn by bullocks, and often in preparing for a crop the land is plowed three or four times and sometimes more depending upon the previous crop and the moisture content of the soil. Seeds of most crops are sown thickly and the excess plants removed by hand weeding. Crops, such as rice and millet, are sometimes started in a thickly seeded, specially prepared nursery and seedlings are transplanted to the field.

Crops are often grown in mixtures. For instance, in the uplands of the Godavari District, 30 pounds of rice seed and 3 pounds of cotton seed are mixed and broadcast over each acre in June and at the time this seed is being covered red gram is sown in the same field by drilling the seed in the plow furrows 6 to 8 feet apart. Crops in this mixture are harvested as follows: rice in October, redgram in February, and cotton in successive pickings thereafter.

Practical ways to fertilize the soil are presented. Ways of utilizing commercial fertilizers, green manure crops, and animal manures are recommended. One method of manuring the soil for cotton in the Malabar District is to pen about 1,500 sheep per acre in the field for a night.

The volume contains an immense amount of information about field crops, including their history, adaptation, distribution, improvement, and suitability of specific varieties for use in the different crop growing areas of South India. The book is well written with large easy-to-read type and it is fairly well illustrated. It is written so as to be particularly helpful to the extension agriculturist and practical farmer rather than the agricultural scientist. Good as the book is, its value and usefulness would be much extended if it had an index.

THE COMPLETE BOOK OF GREENHOUSE GARDENING
By Henry T. and Rebecca Northen. New York. The Ronald
Press Co. 353 pages. 1956. $6.50.

This reviewer has long nurtured a desire to raise chrysanthemums under glass—when time and other resources permit the luxury of such a hobby. Dr. and Mrs. Northen, the University of Wyoming botanists, have long shared their knowledge with amateur gardeners and home gardeners as well as with college students and professional colleagues. They now present us with an authoritative and practical "how to do" book on a good house gardening. It is a comprehensive discussion that covers almost everything related to this subject.

Here the reader can learn how to select and build a greenhouse, how to manage it, how to assure soil fertility, how to propagate plants, as well as how to control greenhouse pests and diseases. There are also special instructions on the culture of common and unusual cut flowers, pot plants, exotic foliage, ferns, begonias, orchids, amaryllis and other families of plants. Vegetables are also considered. There are more than 60 pages of excellent quality half-tone illustrations and numerous drawings.

This is an excellent book and it is consistent with the high quality and readability which the authors established in their previous joint effort, "The Secret of the Green Thumb."

HANDBOOK OF CHEMISTRY, 9th Edition
By N. A. Lange, Sandusky, Ohio, Handbook Publishers, Inc.
1,969 pp. 1956. $8.50.

The extremely valuable ninth edition contains the following information not available in the eighth: Physical properties of the lithosphere, atmosphere, abundance of short lived isotopes, elements in the human body, information on plastics, steels, and other alloys, activity coefficients of ions in water, and relative humidities in equilibrium with solutions. A large number of hold-over tables have been completely rewritten.

Items of special interest to the soil scientist include laboratory hazards and precautions, detailed properties of minerals including descriptions, optical, and chemical; lists of inorganic compounds and organic compounds including a section on nomenclature; resistance wire, standard sieve series, spectral emission table for qualitative analyses and the list of sensitive spectral lines by wave length for quantitative analysis; solubility product constants, aqua ammonia solution concentration by specific gravity, ionization constants of acids and bases, electrical conductance, refractive index of chemicals by formula, X-ray spectrography, ratings of desiccating agents, thermal capacity of solids, and numerical tables. The soil chemist will want to have this book at hand, close to his desk.—M. L. Jackson

METHODS OF CHEMICAL ANALYSIS FOR SOIL SURVEY SAMPLES
By A. J. Metson, New Zealand Department of Scientific and
Industrial Research, Soil Bureau, Bulletin 12, 298 pp.,
1956. 30s.

Mr. Metson of the New Zealand Department of Scientific and Industrial Research, Soil Bureau, has prepared detailed descriptions of the analytical methods regularly used by the Soil Chemistry Section of the Bureau for the examination of soil survey type samples. He brings out the point that chemical analyses made in connection with soil surveys must be restricted to a comparatively few determinations, which will be useful in characterizing the soil series—such as pH; available phosphate, carbon and nitrogen; cation-exchange properties; soluble salts; and calcium carbonate content.

Although classed as a Bulletin, this is really a full scale book that very adequately takes up the following topics: Chapter I, The Preparation of Soil Samples for Chemical Analysis, The Determination of the Moisture Factor, pH, and Calcium Carbonate; Chapter II, discusses the Determination of Phosphorus and Sulphur; Chapter III, The Determination of Total Nitrogen, Organic Carbon Nitrate and Ammonia-nitrogen, and the Analysis of Plant Litters; Chapter IV, discusses Cation-exchange Methods; and Chapter V, Analysis of Soluble Salts.

Appendix I takes up a discussion of Units Employed in Reporting Soil Analyses, Relationship between Analytical Units, and A Guide to the Interpretation of Chemical Analysis of New Zealand Soils. Appendix II discusses the Determination of pH by the Quinhydrone-Electrode Method, and Appendix III, the Operation of the Beckman Flame Photometer. There is a complete list of references, and a good index.

The author particularly in discussing the interpretation of chemical analysis, and in pointing out the need of characterizing the properties of soil types by both physical and chemical analysis. —R. Earl Stone

126