preparing a book on land problems. Dr. Gray's work was made available to the authors through his widow, and they have used it as the basis for their book which takes into account the vast social and economic changes which have taken place since the 1930's and which have affected the significance of Dr. Gray's studies in that decade.

The book gives systematic treatment to the following aspects of the subject: effects of English and Colonial precedents on our land policies; summary of our land disposal policies; discussion of the problems of land settlement, land evaluation, land requirements and land management, and the problems of land reform. Land economics, in general, is treated and presented as a dynamic branch of social science.

AGRICULTURAL POLICY

"Farm Programs and National Welfare" is the subtitle to this exceptionally well written book which presents a good defense of the need for governmental policy with respect to agriculture and the national economy. A positive relationship between programs and national welfare is implicit in the subtitle, and the author presents both the potentials of the limitations of government action in farm problems. The book is written, says the author in the preface, "for anyone who is curious to understand what problems farmers are facing in their relations to an industrial world, and what the government is doing to help them meet these problems." That such help is not only desirable but necessary is considered to be one of the economic facts of life today. The author, chairman of the agricultural economics department at North Dakota Agricultural College, holds that agricultural problems today are problems of national political economy; and from this clearly stated point of view, he analyzes the problems of farm policy in five major parts, viz.: policy making in a free society; evaluation of ends, means and consequences of agricultural policy; programs for improving resource allocation (production credit, soil conservation, forest and range management, etc.); farm price policy, and programs for improving income distribution.

SOILS AND LAND OF MICHIGAN

The natural character of the land surface of Michigan in association with varying social, economic and political conditions, and its influence on land utilization is the subject of this interesting book. It is based on long and critical study of the area by one of America's ablest soil scientists and ecologists. General descriptions of the physiography, vegetation, parent rocks, slope and relief of the state are presented in the first quarter of the book. The relationships of these factors to the physical and chemical properties of the soils are outlined in the chapter on pedology. This section should be valuable to everyone interested in soils of the Great Lakes Region, Podzol and Gray Brown Podzolic areas elsewhere in the world, or in the natural geography of this area as part of a national or world picture. It summarizes many of the author's unique contributions to the terminology of soil science.

The central two-fourths of the text describe the combinations of all the above natural features of the landscape. The relation of natural limitations to the potentials and utility of each area are skillfully interwoven. In the final quarter of the book, Prof. Veatch discusses objectively the geopolitical implications of the natural geography of the area. These are then used as a background for his predictions of future land use trends and potentials. He estimates that Michigan has more than 30 million acres of potentially arable land. This figure is astonishing when compared to the 12 million tillable acres now in farms, and the fact that only about 8 million acres are used annually for harvested crops. In recognition of its monumental nature, the Michigan Agricultural Experiment Station has designated this book as No. 7 in its Memoir Series. — E. P. Whiteside.

SERGEI N. WINOGRADSKY
HIS LIFE AND WORK

Dr. Waksman has performed a real service in reviewing the life, personality and achievements of this great bacteriologist. No other American, and certainly few, if any, present-day European scientists, knew Winogradsky so intimately. The friendship of these two scholars was kindled by mutual interests and endeavors; each contributed voluminously to the rise and development of soil microbiology as an independent science. Other sympathetic bonds, in addition to their native Russian backgrounds, encouraged an active correspondence between them over a period of 30 years. In consequence, this volume is an impressive memorial to a friend and worthy colleague.

Waksman's biography of Winogradsky is a panoramic portrayal of a brilliant scientist who, despite hardships, world conflicts and ill health maintained a solidarity of purpose to become a leader in his field. The organization of the volume merits high commendation. Its text material should appeal especially to those bacteriologists who aspire to become better acquainted with the history of their science and its founders. The introductory section, "As I Saw Him," consists of recollections by Waksman of his first visit to Winogradsky's home and laboratory outside of Paris in early May, 1924. Two sections: I. Winogradsky: The Man and the Scientist, and II. Winogradsky and the Scientific World, follow with a coverage of 86 pages of carefully compiled historical information. Although these two sections cover in large part Dr. Waksman's paper in Soil Science, vol. 62, pp. 197-226, 1946, this repetition is well justified in this separate volume. The third section comprises letters and excerpts from a voluminous correspondence to Waksman from Winogradskv. Through these personalia the reader learns of the difficulties in compiling and publishing Winogradsky's collected works in 1949. Winogradsky's sorrows and privations wrought by sickness and war during World War II, and his ever-sensitive evaluation of the papers being currently published in soil bacteriology. A few informal snapshots and an excellent portrait photograph of Winogradsky enrich the book.

Biographies of this quality are indispensable on the bookshelf of the bacteriologist and the soil scientist. — O. N. Allen