

New Books . . .

The World Fertilizer Economy

MIRKO LAMER, Stanford University Press, Stanford, California, 1957. \$12.50. xvi + 715 pages. Reviewed by K. G. CLARK, Agricultural Research Service, U. S. Department of Agriculture, Beltsville, Maryland.

THE AUTHOR has been eminently successful in accomplishing his stated objective of recording changes during World War II in the magnitudes and forms of commercial fertilizers produced and used in various countries of the world.

Of the 32 chapters into which the book is divided the first five are devoted largely to historical development of concepts of the functions of plant nutrients, the effects of soil and climatic environment on plant growth, the origin and classification of fertilizers, the relative availability of plant nutrients in manures and fertilizers, yield responses to commercial fertilizers, and use of the principle of diminishing physical productivity at increasing rates of fertilizer application as a tool in the computation of fertilizer response curves.

Unfortunately, several inaccuracies which may not be apparent to all who have an interest in the book were noted in passages relating to fertilizer chemistry and technology. Thus, hydrogen is described as a source of nitrogen (page 4), coal and coke as sources of hydrogen (pages 38 and 41), ammonium phosphate as being produced with nitric acid (page 39), metaphosphate with phosphoric acid (page 39), acidulated phosphate not containing calcium sulfate, with nitric and sulfuric acids (page 39), and among others concentrated superphosphate by treating phosphate rock first with sulfuric acid and then with phosphoric acid (page 49). Furthermore, production of synthetic ammonium sulfate in the United States is not based on the gypsum process as might be inferred from the author's definition of this material (page 45).

Having established the importance of commercial fertilizers in providing an ever-increasing world population with adequate supplies of food, feed, and fiber, the author then presents data on the consumption, potentials for production, trade and price relationships, and reserves of fertilizer materials in the various countries.

The book describes the national and international trade agreements entered into by the respective producers of nitrogen, potash, and phosphate rock

prior to World War II to regulate production and marketing, the impact of the war on fertilizer production and consumption patterns throughout the world, and the price control and allocation regulations imposed by the belligerents to minimize the effects of the wartime dislocation of production and supply of fertilizers on crop production. The activities and functions of the Combined Food Board during the war period, and of the United Nations Relief and Rehabilitation Administration and the International Emergency Food Council of the United Nations during the early postwar years also are described in relation to fertilizer production and distribution.

Nearly 10% of the book is devoted to the fertilizer economy of the Soviet Union both before and after World War II. Among the topics treated are phosphate rock and apatite, potash deposits and mining, nitrogen sources, fertilizer industries, soil and fertility, biological nitrogen from crop rotation and inoculation with bacteria, application of manures and fertilizers on crops, and allocations of fertilizers in the organizational structure of agriculture.

Chapters are devoted also to North Africa and the Levant, European neutrals and nonbelligerents, countries of Far Eastern Asia, and Latin America.

The appendix comprises 64 tables giving both prewar and wartime consumption, production, trade and price relationships of fertilizers and fertilizer materials, and comparisons between fertilizer usage and crop yields for many countries.

LITERATURE AVAILABLE

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