A NUTRIENT ELEMENT SLIGHTED IN AGRICULTURAL RESEARCH

FREDERICK J. ALWAY

FOR more than a century sulfur has been recognized as an indispensable plant nutrient and for still longer sulfur fertilizers have been used extensively both in this country and Western Europe, but until very recently it has been thought unnecessary to apply sulfur as a fertilizer. The history of the use of sulfur fertilizers may be divided into three periods, calling the first the Reign of Gypsum, the second the Reign of Superphosphate, and the third, in which we meet, the Renaissance, or Modern Period. In the first, covering 80 or 90 years, from about 1760 to 1845, gypsum was used widely and its beneficial effects generally overestimated. In the second period, extending into the early part of this century, some 60 years in all, the need of any sulfur additions to the soil was ignored and the use of gypsum discouraged by agricultural scientists. The Modern Period dawned when a Russian chemist, Bogdanov, questioned the assumption that the natural supply of sulfur is everywhere sufficient for crops and three English agronomists, stationed at a county laboratory, put the question to a practical test on local fields. Following the work of these pioneers various localities have been identified in which sulfur-deficiency is common, or at least occasionally appears, but the crops now recognized as the first to show a need of sulfur fertilizer are practically the same as those known in the first period to be most benefited by gypsum.

THE FIRST PERIOD—EARLY USE OF GYPSUM

The earliest part of this period is best described by Pierre, who was professor of general chemistry and agricultural chemistry at the old French university of Caen. In his Chimie Agricole, which carries no date of publication, he reports his free public lectures given from 1848 to 1852, devoting some 30 pages to gypsum, other sulfates, and sulfuric acid. I shall quote a few paragraphs:

1Address of the President delivered before the thirty-third annual meeting of the Society at Chicago, Ill., December 5, 1940. Paper No. 1864 Scientific Journal Series, Minnesota Agricultural Experiment Station.

2Chief of the Division of Soils, University of Minnesota, St. Paul, Minn.