THE LOSS OF SULFUR IN DRAINAGE WATER.¹

T. L. LYON AND J. A. BIZZELL,
CORNELL UNIVERSITY, ITHACA, N. Y.

The recent interest concerning the supply of sulfur in soils and its possible need as a constituent of fertilizers suggests the desirability of publishing at this time some data on the content of sulfates in the drainage water from soil contained in the lysimeter tanks erected at Cornell University in 1908. Five crops have now been grown in these lysimeters and the sulfate content of the drainage water for four years is available. The soil from which these data are derived is known as Dunkirk clay loam. It is a soil of good fertility when properly tilled, although somewhat likely to become compact on account of its high proportion of fine particles. However, there has been no difficulty in securing good drainage from the lysimeters. These tanks are each 4 feet, 2 inches square and 4 feet deep, and thus contain about 3.5 tons of soil. The drainage water is collected and measured and samples representing the entire flow are analyzed.

Not many data have been published that indicate the loss of sulfur in drainage water. Hanamann² reports the results of experiments with lysimeters in which several soils were placed and drainage collected from soil cropped and uncropped. The period during which the drainage was collected was from April 1 to October 30 of one year. The quantity of sulfur in the drainage water for this period was 44 pounds per acre from a basalt soil and 37 pounds from an alluvial soil, both of which remained bare of vegetation during the entire period. Crops were grown on the alluvial soil. From the lysimeter on which maize was grown there were 29 pounds and from the lysimeter on which red clover was grown there were 15 pounds per acre of sulfur in the drainage water.

Norton³ estimated sulfur among other constituents in the drain-

¹ Contribution from the Department of Soil Technology, Cornell University. Received for publication January 24, 1916.