Chemical and biological studies of the residual effects on the soil of various manurial treatments are essential to the proper interpretation of field data with respect to the differences in response of field crops to fertilizer applications. In our more comprehensive field plat experiments, therefore, provisions are made for such studies, especially as related to the effects of the particular treatments on soil organic matter. A review of the literature concerning such studies shows that as the result of different conditions and methods of experimentation the investigators differ widely in their interpretations and subsequent recommendations. This is especially true in regard to the comparative effects of different liming materials on the decomposition of soil organic matter.

A brief review of the literature on this one phase of the subject under consideration serves to emphasize the different results secured.

In their studies on Rhode Island soils in 1899 Wheeler, Sargent, and Hartwell (18) concluded that air-slaked lime caused an increase in organic matter on grass plats as compared to unlimed soils. Hess (6) in 1899 and 1900 studied the limed plats of the Pennsylvania field experiments and found less organic matter and nitrogen on the plats treated with caustic lime than on those that had received carbonate of lime.

Hartwell and Kellogg (5) in 1906 concluded from further studies at the Rhode Island Station that the effect of lime depended largely on soil reaction.

Mooers, Hampton, and Hunter (12) in 1912 reported a greater loss of nitrogen on limed plats than on those unlimed.

McIntire (11) from a study of the Pennsylvania plats in 1911 concluded that caustic lime caused a decrease in organic matter as compared to carbonate of lime.

Lipman and Blair (8) in 1913 reported a greater loss of nitrogen on limed land than on unlimed soil.

Potter and Snyder (13) reported in 1916 a gain of nitrogen as the result of liming.

1Paper read as a part of the symposium on "Soil Organic Matter" at the meeting of the Society held in Washington, D.C., November 19, 1926. Contribution from the Department of Agronomy, Pennsylvania State College, State College, Pa.
2Professor of Soil Technology.
3Reference by number is to "Literature Cited," p. 395.