

## CHEMISTRY

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BY A. M. PETER

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The work of the department has been along the same lines as heretofore, being principally in relation to soil problems, but has, as usual, included much of a miscellaneous character.

Quantitative analyses of 49 samples of soil, from 12 counties, have been completed and work is under way on 64 samples from Shelby County, taken in connection with the soil survey of that county, made in co-operation with the Bureau of Soils. Mr. Averitt was in the field most of the summer, in connection with this survey. Qualitative tests have been made upon 151 samples of soil from 43 counties and suggestions have been given the senders as to the desirability of using phosphate and limestone, or other treatments, upon their land.

Determinations of lime, or of lime and magnesia, have been made in 379 samples of limestone, from 52 counties, and recommendations given as to the suitability of the materials for agricultural use.

Further studies on the composition of lime-sulfur solution were made and reported upon in two scientific papers.

Co-operative work for the referee on insecticides and fungicides of the Association of Official Agricultural Chemists was engaged in.

Sixty-six analyses of coals and other minerals were made for the Kentucky Geological Survey.

Seventy-four samples of water, from 34 counties, were examined.

Numerous analyses or examinations were made of various materials sent in by farmers and others, making a total of 816 samples, including the foregoing, analyzed or examined in the department this year.