



Report of Progress

1915

J. B. HOEING State Geologist





REPORT OF PROGRESS.

To Hon. A. O. Stanley,

Governor of Kentucky and President of the Advisory Board:

Dear Sir:

As required by the Statute, I have the honor to submit the following Report of Progress for the current fiscal year beginning July 1, 1915.

The Act of Legislature of 1912, creating a "New Geological Survey," appropriated the sum of twenty-five thousand (\$25,000) dollars per annum for carrying on the work of the survey. This appropriation, however, was divided in two parts: one appropriated \$10,000 per annum for topographic work in co-operation with the United States Geological Survey, leaving only \$15,000 per annum for all other work in the State; this includes all other mapping, all geological work, chemical work, stream measurements for water power, soil surveys, etc.

TOPOGRAPHY.

The annual appropriation of \$10,000 for making topographic surveys and publishing contour maps is met by an appropriation of equal amount made by the United States Geological Survey, and the surveying and mapping of the quadrangles is carried on by the two surveys in co-operation, but in such areas and locations as directed by the State Geologist. During the three and a half years that the new survey has been in existence, nearly four thousand square miles of the State's area have been surveyed and mapped under this arrangement at a total cost of about \$18.00 a square mile, or a cost to the State of Kentucky of about \$9.00 a square mile. Much the largest portion of this work was done in the eastern and western coalfields, where the surface is rough—necessarily the most expensive portions to

survey—and the resulting cost per square mile is remarkably low. The character of this work is first class. A small map of Kentucky is filed with this report, which shows the total area covered by these surveys up to date.

For carrying on these topographic surveys there has been expended during this fiscal year by the State of Kentucky the sum of \$5,251.84.

GEOLOGIC WORK.

Since July 1, 1912, when the new State survey began, geological surveys have been carried on in as many portions of the State as the time and funds available would permit, but mostly in the two coalfields, although the clays, fireclay, zinc, fluorspar, asphalt and other regions have also been covered, and detailed maps and reports published covering them. Seven volumes of reports, comprising over 2,500 pages of printed matter, have already been issued, along with a great many printed maps, sections, etc. In addition to these printed reports, field work has been completed for six more volumes, which will be printed and issued before the end of the present fiscal year. These new reports will include, along with other matter, a complete report and map of Letcher County, reports on other parts of the eastern and western coalfields and a complete report on Coal Mining Methods in Kentucky. A new State geologic map has also been compiled and brought up to date and will shortly be ready for distribution.

CO-OPERATIVE WORK WITH OTHER BUREAUS.

The statute authorizes the State Geologist to co-operate with the Kentucky Agricultural Experiment Station, the United States Geological Survey and the other government bureaus in geologic work, soil surveys, etc., provided such departments in each case expend an equal amount of money for such work to that expended by the State survey. In accordance with this provision the State Geologist has entered into co-operation with the United States Geological Survey for geologic work in western Kentucky and in Jefferson County; with the

United States Bureau of Mines in sampling and analyzing coal from the coal mines of this State; with the Hydrographic Bureau in stream measurements for water power, and with the Kentucky Agricultural Experiment Station in soil surveys. The work in all these lines has been under the supervision of the State Geologist and has resulted in the State of Kentucky getting the work done for one-half the expense it would otherwise have cost, and in much less time. The co-operative survey of Jefferson County has been completed, and the report issued; the field work for the co-operative work in western Kentucky is finished and the reports will be written this winter. In the co-operative work with the Bureau of Mines, samples have been taken and analyses made of the coal from about two-thirds of the mines in the State, and it is planned to complete this work next season. Stations for stream measurements for calculation of water power have been established in co-operation with the Hydrographic Bureau at five points. At these stations the gauges are read twice each day. A soil survey of Franklin County made in co-operation with the Kentucky Agricultural Experiment Station has just been completed, and the report and map issued. The chemical work of the survey is also done in the laboratories of the Experiment Station.

The total expenditure to date for all of the State work, outside of the expenditure for topographic co-operative work, this, however, including all other co-operative work, has been \$5,618.03.

Total expenditure for both topographic and geologic surveys—\$5,251.84+\$5,618.03=\$10,869.87.

Amounts unexpended:—

For topographic co-operative work.....	\$ 4,748.16
For geologic work, etc.....	9,381.97

Total balance	\$14,130.13
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Respectfully submitted,

J. B. HOEING,

State Geologist.

Frankfort, December 7th, 1915.

