



SHOOTING OF THE KIRKPATRICK WELL, NEAR VAN BUREN, GRANT CO., IND.

75

INDIANA.

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DEPARTMENT

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— OF —

Geology and

Natural Resources.

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TWENTY-FIRST ANNUAL REPORT.

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W. S. BLATCHLEY,  
STATE GEOLOGIST.

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INDIANAPOLIS, January 26, 1897.

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*Auditor of State.*

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*Secretary of State.*

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THOMAS J. CARTER,  
*Clerk Printing Bureau.*

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*State of Indiana,*  
*Department of Geology and Natural Resources.*

INDIANAPOLIS, IND., January 25, 1897.

HON. JAS. A. MOUNT, *Governor of Indiana:*

DEAR SIR—In accordance with the provisions of the law under which the Department of Geology and Natural Resources of the State of Indiana was organized, I have the honor to submit to you the Twenty-first Annual Report of that Department. The contents of the Report pertain very largely to the economic natural resources of the State and embrace the results of the work accomplished by the different divisions of the Department during the calendar year 1896.

Very respectfully,

W. S. BLATCHLEY,  
*State Geologist.*

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## INTRODUCTORY.

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The people of Indiana, engrossed with the cares and duties of their respective vocations, too seldom pause to consider the great natural resources of their State, or the high rank which that State is rapidly assuming as a mineral producing and manufacturing center.

Twenty years ago Indiana was noted mainly for her agricultural products—her crops of corn and wheat, her droves of fine cattle and hogs, her blue grass pastures and her large areas of native timber lands. Today she still ranks high as an agricultural State, but to the world at large her mines of coal, her quarries of building stone, her deposits of clay, her petroleum wells and her large area of natural gas territory are her most valuable possessions. They, and not her soil, are the resources which are now attracting so rapidly within her bounds capital and population from other States and nations of the world.

Ranking in area of square miles but thirty-fourth among the forty-five States of the Union, Indiana, in 1895, stood sixth in the production of coal, fourth in the production of petroleum, second in the production of natural gas, seventh in the production of building stone and sixth in the value of her clay products. According to careful computations made by the United States Bureau of Mineral Resources the value of the five resources above named, produced in Indiana in 1895, amounted to the vast sum of \$17,125,000.

It is, in my opinion, the province of the Department of Geology and Natural Resources to investigate these great natural products of our State, to gather information concerning their distribution, their abundance and their fitness for the uses to which they are put, and to make known that information through the proper channels to all persons interested in such resources.

A secondary province of the Department is the collecting of information concerning the great rock formations of the State—their outcrops, their fossils, their relations to the overlying soils and to the streams which flow above or through them. Such information, when properly compared and correlated, will in time furnish the basis for an *accurate* geological map of the State—something that yet has never been published; and for

a volume which will give in detail to those interested in technical geology more exact information than is now available concerning the origin and history of each of the great geological horizons represented in the State.

When I was chosen as the Chief of the Department of Geology I resolved to abandon, for the most part, the unscientific method, formerly in vogue, of county surveys, since the civil boundaries of a county have nothing to do with the limits or boundaries of a natural resource or geological formation. In its stead I adopted the plan of taking up each of the great natural resources of the State and preparing a monograph or special report thereon; said monograph to be based upon months of actual field investigation and to include maps, cuts, engravings and tables of chemical and physical tests. My first report, issued in May, 1895, was prepared on the plans established and treated in detail the following resources:

*First.* The clay deposits accompanying the coal measures of the State.

*Second.* The sandstones of western Indiana.

*Third.* The whetstone and grindstone resources of southern Indiana.

The present volume is the twenty-first in the series of reports dealing with the geology of the State and the second issued during my administration. It shows in detail the results of the work accomplished by the Department during the calendar year 1896.