THIRTY-SEVENTH ANNUAL REPORT

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Department of
Geology and Natural Resources

INDIANA

EDWARD BARRETT
State Geologist

1912

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May 28, 1913.

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OFFICE OF AUDITOR OF STATE,
INDIANAPOLIS, September 6, 1913.

The within report has been examined and found correct.

W. H. O'BRIEN,
Auditor of State.

SEPTEMBER 6, 1913.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

B. B. JOHNSON,
Secretary to Governor.

Filed in the office of the Secretary of State of the State of Indiana.

L. G. ELLINGHAM,
Secretary of State.

Received the within report and delivered to the printer September 6, 1913.

ED D. DONNELL,
Clerk Printing Board.
STATE OF INDIANA,
DEPARTMENT OF GEOLOGY AND NATURAL RESOURCES.

INDIANAPOLIS, IND., MAY 28, 1913.

Samuel M. Ralston, Governor of Indiana:

My Dear Sir—I am sending you today the manuscript of the Thirty-seventh Annual Report of the Department of Geology and Natural Resources of Indiana. The assembling of the data of the report was delayed several weeks because of the inability of the U. S. Bureau of Soils to get their portion of it completed and transmitted to me. Through the courtesy of Milton Whitney, Chief of the Bureau of Soils, the report on the co-operative work between the State of Indiana and the United States Government was hurried to completion, and our citizens will get the benefit this year of the work done under the co-operative contract.

Respectfully submitted,

Edward Barrett,
State Geologist.
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INTRODUCTION.

By Howard Barrett.

The major portion of the State Geologist's time during the field season of 1912 was taken up in the investigations of the Soils of the State.

He believes that a survey of the Soils of the State is a proper function of the Department of Geology. He has never been able to see why an investigation and discussion of the geological formation known as Soil is not as important as the next formation below it, whatever that formation may be. Hence, the bulk of the energy and means of the Department during the calendar year 1912 were devoted to the Soil problem.

In the investigations and discussions of the Soils of the State, the State Geologist endeavors to stay within the realm of Geology; therefore he approaches the Soil problem under the following heads:

1. Topography and its influence on plant life, native and cultivated.
2. Geological formations, study of outcroppings, areal extent and classification of same.
4. Study of exceptional soil conditions—sour, acid, swamp, peat and muck areas.
5. Drainage, natural and artificial.

In past years almost every rock formation known in Indiana, from the lowest Ordovician up to the recent Glacial, have been surveyed. Days, months, years of time and thousands of dollars of money have been spent by former geologists in these surveys, but only in recent years has any systematic survey of the Soils been made. The present Geologist, during his first year—1911—in charge of the Department, made the Soils the major part of the Department's work.

In 1912, the Soil surveys by counties were prosecuted under a co-operative agreement with the United States Government. This work will be continued during 1913.
During 1912, Mr. L. A. Hurst of the U. S. Bureau of Soils, and Messrs. E. J. Grimes and H. G. Young of this department, surveyed the soils of Tipton and Hamilton counties.

Mr. W. E. Tharp of the U. S. Bureau, and E. J. Quinn of the Indiana Department, made a close, detailed survey of the soils of Boone County.

The soil work of Montgomery County was done by Grove B. Jones, from the U. S. Department of Agriculture, and Harold Orland from this office.

The Putnam County work was in charge of Mr. Noble Coryell and Ralph S. Hesler of Indiana University. These field men went carefully over the area assigned them, and their report and map is one of the best in the present volume.

It is not the purpose of the Department of Geology to survey at present the soils of Madison, Tippecanoe, Newton, Marshall and Allen counties. These counties were surveyed some years ago by the U. S. Bureau of Soils and the reports were published on each county in bulletin form. So few of these bulletins ever reached Indiana, and there has been such a great demand for information on the soils of these counties, that it is deemed advisable to incorporate the reports and maps of these counties in the present volume, and with the consent of the United States Bureau this has been done.

The State Supervisor of Natural Gas.—Much of the time of the Supervisor during 1912 was spent in the field, safeguarding the gas and oil interests of the State. The Legislature of 1913 amended the law relating to the waste of gas, by which a fine of $50 to $500 is imposed on persons convicted of violating the law. Heretofore no penalty was attached to the law for the waste of gas, and the Supervisor and prosecuting attorneys were almost helpless in prosecutions. Much good will doubtless come from the penalty amendment where reckless oil drillers and companies permit escape and destruction of gas.

The present report closes with a discussion of the Stratigraphy and Paleontology of the Tanner's Creek Section of the Cincinnati Series, by Dr. E. R. Cumings of Indiana University and his students. The paper is the result of several years' study in field and laboratory, of the Stratigraphy and prevailing types of Bryozoa as shown in exposures of the Cincinnati formations in Indiana.