

INDIANA.

DEPARTMENT

OF

Geology and Natural Resources.

NINETEENTH ANNUAL REPORT.

S. S. GORBY,
STATE GEOLOGIST.

1894.

TO THE GOVERNOR,

INDIANAPOLIS:

WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING.

THE STATE OF INDIANA,
EXECUTIVE DEPARTMENT,
NOVEMBER 20, 1894. }

Received by the Governor, examined and transmitted to the Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

MYRON D. KING,
Private Secretary.

Filed in the office of the Secretary of State of the State of Indiana, November 20, 1894.

W. R. MYERS,
Secretary of State.

Received the within report and delivered to the printer November 20, 1894.

J. B. MAYNARD,
Clerk Printing Bureau.

State of Indiana,
Department of Geology and Natural Resources,

INDIANAPOLIS, IND., September 4, 1894.

TO HON. CLAUDE MATTHEWS,
Governor of Indiana:

SIR—Herewith I submit the Nineteenth Report of the Department of Geology and Natural Resources. The report embraces reports of the State Inspector of Mines, State Inspector of Oils, State Supervisor of Natural Gas, accompanied by a geological map of Indiana, showing location of stone quarries and natural gas and oil areas.

It is hoped the report will be a valuable aid to those interested in the geology or natural history of the State, whether in an economic or purely scientific sense.

Respectfully submitted,

S. S. GORBY,
State Geologist.

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TABLE OF CONTENTS.

Introductory	7
Geology of Cass County	17
Report of Inspector of Mines	49
Report of Supervisor of Oils	112
Report of Supervisor of Natural Gas	123
The Lampreys and Fishes of Indiana	147

INTRODUCTORY.

This volume, the nineteenth in serial number of the reports issued by the Department of Geology and Natural Resources, is the report for the year 1893. It comprises the following papers, prepared by the assistants of the State Geologist, S. S. Gorby:

“THE GEOLOGY OF CASS COUNTY.”

In this paper the topography and general geology of Cass County are briefly treated by Messrs. M. N. Elrod and A. C. Benedict. Under the head of “Paleozoic Geology” a number of well and quarry sections in the county are given and commented upon.

“REPORT OF INSPECTOR OF MINES,”

AND

“REPORT OF STATE SUPERVISOR OF OILS.”

These reports, prepared by Thomas McQuade, State Inspector of Mines, and Nelson J. Hyde, State Supervisor of Oils, follow the above, and are largely statistical in their make-up.

“REPORT OF STATE SUPERVISOR OF NATURAL GAS.”

Prof. E. T. J. Jordan, the State Supervisor of Natural Gas, in a report extending over twenty-three pages, shows that the area in the State in which this valuable fuel is found did not increase during the year 1893. According to his belief, based upon careful inspection of gas plants and measurements of pressure in wells, the history of the Indiana gas field is to be that of every other field hitherto discovered—a gradual but sure diminution of the supply of gas. The failure has already begun, as shown by the diminished initial pressure and by the increased pressure of salt water. No gas is being formed at the present time, and only the most careful saving of the amount in store will keep the gas pressure above the water pressure for any great length of time. The careful attention of all producers and consumers of natural gas is directed to this, the latest published report of the State Gas Supervisor.

"THE LAMPREYS AND FISHES OF INDIANA."

All students of Natural History in the State will welcome with delight this valuable paper on the fishes inhabiting our streams and lakes. That it was prepared by Dr. O. P. Hay, formerly Professor of Zoölogy at Butler University, is sufficient guarantee of its accuracy and thoroughness. Dr. Hay has been for many years a careful collector and student of fishes and other creeping, crawling and swimming vertebrates. He has published numerous papers on them, among the most valuable and extensive of which was the treatise on the "Batrachians and Reptiles of Indiana," which appeared in the seventeenth report of this department.

In the present paper 150 kinds of lampreys, and fishes found in Indiana, are carefully described, and the descriptions are preceded by analytical keys, so that with a little careful attention a person who has never before seen a specimen of the kind in hand, can readily determine its family, scientific, and common names, and its relative systematic position among the other fishes of the State. The streams and other localities inhabited by each species, as far as known, are given, and the feeding habits and relative food value of each are fully mentioned, making it, all in all, the only comprehensive and thorough treatise on Indiana fishes ever published.