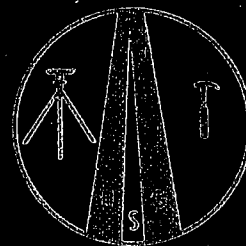


PROCEEDINGS  
OF THE  
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VOL. II



**Proceedings of the  
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**THE OHIO STATE UNIVERSITY AND THE OHIO DEPARTMENT OF HIGHWAYS**

\*\* TABLE OF CONTENTS \*\*

	<u>Page</u>
Correlation of Geological Studies by Various Governmental Agencies in Ohio.	
by: John H. Melvin, Chief, Ohio Geological Survey . . . . .	1
Aids of the Ohio Geologic Survey for Highway Engineers.	
by: John R. Hyland, Head Engineering Geology Section, Ohio Geological Survey . . . . .	5
Application of Geology to Highway Engineering as seen by a Highway Engineer.	
by: W. A. Warrick, Chief Construction Engineer, Pennsylvania Department of Highways . . . . .	12
Ohio's Experience in the Use of Geophysical Methods in Subsurface Exploration.	
by: Neil E. Mason, Engineer, Testing Laboratory, Ohio Department of Highways . . . . .	22
Importance of Ground Water Studies to Highway Engineering.	
by: Stanley E. Norris, Acting District Geologist, Ground Water Branch, U. S. G. S. . . . .	35
Effect of Coarse Aggregate on Concrete Durability.	
by: D. W. Lewis, Research Engineer, Joint Highway Research Project, Purdue University . . . . .	41

Geology in the Engineering Curriculum, The  
Highway Engineer's Viewpoint.

by: Olin W. Mintzer, Case Institute of  
Technology . . . . . 50

Geological and Soils Engineering on Ohio  
Turnpike Project No. 1.

by: Carl W. A. Supp, Engineering Geologist,  
J. E. Greiner, Company. . . . . 61

Three Dimensional Aspects of Landslides.

by: Lewis Berger, Consulting Engineer,  
East Orange, New Jersey

(Paper not available for publication)

CORRELATION OF GEOLOGICAL STUDIES BY  
VARIOUS GOVERNMENTAL AGENCIES IN OHIO

by

John H. Melvin  
State Geologist and Chief  
Ohio Division of Geological Survey

Many groups, State, Federal, Educational and Industrial, accumulate various kinds of basic geologic data as a by-product of their regular activities.

In Ohio, the State Geological Survey has made a persistent effort to establish voluntary, friendly, unofficial relationships with these various groups. It has been found by long experience that the Survey has many services which are of value to such organizations, and that they many times have geologic information which can supplement and enlarge its reservoir of scientific facts. Such a mutual understanding of each other's activities eliminates duplication and increases the efficiency of all concerned. By such friendly cooperation, a high degree of correlation of geological studies is attained.

In most states, the geological survey or its equivalent organization acts as such a clearing house for basic geologic information. It has, therefore, been found mutually beneficial for the Highway Geologist to become personally acquainted with the activities and services of the Geological Survey in the state in which he operates. An acceleration of such cooperation is highly to be desired, and, for this reason, a complete directory of the State Geological Surveys is supplied herewith.

DIRECTORY OF STATE GEOLOGICAL SURVEYS

## ALABAMA

Geological Survey of Alabama  
P. O. Drawer "O"  
University  
Walter B. Jones, State Geologist

## IDAHO

Idaho Bureau of Mines & Geology  
University of Idaho  
Moscow  
A. W. Fahrenwald, Director

## ARIZONA

Arizona Bureau of Mines  
University of Arizona  
Tuscon  
T. G. Chapman, Director

## ILLINOIS

State Geological Survey Division  
Dept. of Registration & Education  
Natural Resources Building  
Urbana  
M. M. Leighton, Chief

## Arkansas

Division of Geology  
Arkansas Resources & Develop. Comm.  
446 State Capitol  
Little Rock  
Norman F. Williams, Director

## INDIANA

Indiana Dept. of Conservation  
Geological Survey, Indiana Univ.  
Bloomington  
Charles F. Deiss, State Geologist

## CALIFORNIA

Division of Mines  
Department of Natural Resources  
Ferry Bldg.  
San Francisco, 11  
Olaf P. Jenkins, Chief & State Mineralogist

## IOWA

Iowa Geological Survey  
Geology Annex  
Iowa City  
H. Garland Hershey, Dir. & State Geologist

## COLORADO

Colorado Geological Survey Board  
c/o Colorado School of Mines  
Golden  
John W. Vanderwilt, Secretary

## KANSAS

State Geological Survey of Kansas  
University of Kansas  
Lawrence  
R. C. Moore, State Geol. & Research Dir.  
J. C. Frye, State Geol. & Ex. Dir.

## CONNECTICUT

Connecticut Geol. & Nat. History Survey  
Trinity College  
Hartford 6  
Edward L. Troxell, Director

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University of Kentucky  
Lexington  
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Daniel J. Jones, State Geologist

## DELAWARE

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University of Delaware  
Newark  
Johan J. Groot, State Geologist

## LOUISIANA

Louisiana Geological Survey  
Geology Building  
Louisiana State University  
Baton Rouge  
Leo W. Hough, State Geologist

## FLORIDA

Florida Geological Survey  
P. O. Box 631  
Tallahassee  
Herman Gunter, Director

## MAINE

Maine Geological Survey  
Orono  
Joseph M. Trefethen, State Geologist

## GEORGIA

Department of Mines, Mining & Geology  
425 State Capitol, Atlanta, 3  
Garland Peyton, Director

## MARYLAND

Dept. of Geology, Mines & Water Res.  
The John Hopkins University  
Baltimore, 18  
Joseph T. Singewald, Jr., Director

## MASSACHUSETTS

No Geological Survey

## MICHIGAN

Geological Survey Division  
Department of Conservation  
Lansing  
William L. Daoust, Acting State Geol.

## MINNESOTA

Minnesota Geological Survey  
University of Minnesota  
Minneapolis, 14.  
George M. Schwartz, Director

## MISSISSIPPI

Mississippi Geological Survey  
University  
William Clifford Morse, State Geol.

## MISSOURI

Div. of Geological Survey & Water Res.  
Department of Business & Administration  
Buehler Building, Rolla  
Edward L. Clark, Director & State Geol.

## MONTANA

Montana State Bureau of Mines & Geology  
Montana School of Mines, Butte  
J. R. Van Pelt, Director

## NEBRASKA

Conservation and Survey Division  
University of Nebraska, Lincoln  
Eugene C. Reed, Director & State Geol.

## NEVADA

Nevada Bureau of Mines  
University of Nevada, Reno  
Vernon E. Scheid, Director

## NEW HAMPSHIRE

Mineral Resources Committee  
N.H. State Planning & Develop. Comm.  
Durham  
T. R. Myers, State Geologist

## NEW JERSEY

Bureau of Geology & Topography  
520 E. State Street, Trenton  
Meredith E. Johnson, State Geologist

## NEW MEXICO

New Mexico Bureau of Mines & Min.  
Res.  
Campus Station, Socorro  
Eugene Callaghan, Director

## NEW YORK

New York State Sci. Svc. Office  
of Geology  
N. Y. State Education Building  
Albany, 1  
John G. Broughton, State Geol.

## NORTH CAROLINA

Division of Mineral Resources  
253 Education Building  
Raleigh  
Jasper L. Stuckey, State Geol.

## NORTH DAKOTA

North Dakota Geological Survey  
Grand Forks  
Wilson M. Laird, State Geol.

## OHIO

Division of Geological Survey  
Department of Natural Resources  
Orton Hall, Ohio State Univ.  
Columbus  
John H. Melvin, Chief

## OKLAHOMA

Oklahoma Geological Survey  
Norman  
William E. Ham, Acting Director

## OREGON

Oregon State Dept. of Geology &  
Mineral Industries  
1069 State Ofc. Bldg., Portland  
F. W. Libbey, Administrator

## PENNSYLVANIA

Bureau of Topographic & Geologic  
Survey  
Department of Internal Affairs  
Harrisburg  
Carlyle Gray, Acting Director

## RHODE ISLAND

Rhode Island Development Council  
State House  
Providence, 2

## SOUTH CAROLINA

South Carolina Geological Survey  
Univ. of South Carolina, Columbia  
Laurence L. Smith, State Geol.

## SOUTH DAKOTA

State Geological Survey, Vermillion  
E. P. Rothrock, State Geologist

## TENNESSEE

Dept. of Conservation, Div. of Geol.  
G-5 State Office Bldg., Nashville, 3  
W. D. Hardeman, State Geologist

## TEXAS

Bureau of Economic Geology  
The Univ. of Texas, Univ. Station  
Box 8022, Austin, 12  
John T. Lensdale, Director

## UTAH

Utah Geological & Mineralogical Survey  
200 Mines Building, Univ. of Utah  
Salt Lake City  
Arthur L. Crawford, Director

## VERMONT

Vermont Geological Survey  
East Hall, Univ. of Vermont  
Burlington  
Charles G. Doll, State Geologist

## VIRGINIA

Department of Conservation & Develop.  
Geological Survey Division  
Box 1428 University Station  
Charlottesville  
Wm. M. McGill, State Geologist

## WASHINGTON

Division of Mines and Geology  
404 Transportation Building  
Olympia  
Sheldon L. Glover, Supervisor

## WEST VIRGINIA

West Virginia Geological & Economic  
Survey  
Box 879 Mineral Industries Building  
Morgantown  
Paul H. Price, Director & State Geol.

## WISCONSIN

Wisconsin Geological & Nat. History  
Survey  
115 Science Hall, Univ. of Wisconsin  
Madison, 6  
George F. Hanson, State Geologist

## WYOMING

Geological Survey of Wyoming  
University of Wyoming  
Laramie  
Horace D. Thomas, State Geologist

AIDS OF THE OHIO GEOLOGICAL SURVEY FOR  
HIGHWAY ENGINEERS

by

John R. Hyland  
Head, Engineering Geology Section  
Ohio Geological Survey

The Geological Survey of Ohio was first organized in 1837 for the purpose of collecting, studying and interpreting all available data pertaining to the origin, extent, use and valuations of geological and mineralogical resources of the state, and making this data available for use by commerce, industry and the public in general. Over the years, a great deal of information has been collected and published.

It is the purpose of this paper to point out some of the material available, both published, and unpublished, and to show where it might aid the highway engineer in his work.

I will begin with the small scale publications and progress to the larger scale, pointing out along the way some of the possible utilization of these in the planning, construction and maintenance phases of highway work.

Of course, we have the state maps at a scale of one inch to eight miles. The geological map (Figure 1) shows the general picture of bedrock in the state. From this, the broad areas of limestone, shale, coal and so on may be delineated. The areas of Permian and Pennsylvanian in the southeast represent the coal-bearing measures; the Mississippian through the central portion and in the northwest, shales and sandstones; the Devonian of the central part, limestones and shale; the Silurian and Ordovician limestones, dolomites and shales. The regional structure is also shown here. The Highway Testing Laboratory has used this as a part of the base for their generalized engineering soils maps.

The part which shows the general soil types in the unglaciated southeastern part of the state is based on the state geological map. Here the soils are residual and a knowledge of the parent rock underneath is necessary for determining soil type.

Another state map shows the glacial deposits (Figure 2). In western, central, and northeastern Ohio, the soils are generally Wisconsin till. This map shows the areas of moraine in a general way. Along the lake and in northeastern Ohio are the lake plains, the lacustrine clay soils. This general knowledge is important in the planning and design stage as one of the criteria for pavement design. The generalized soils map of the state, in part, is based on the glacial divisions.

The state mineral industries map, along with the directory of mines and quarries, is useful in telling the engineer the type and number of aggregate producers, which may influence the estimated cost for the roadway, in a given region.

A publication, Peat Deposits of Ohio, will be of assistance in helping to avoid troublesome peat areas, or where unavoidable, can help the engineer more fully understand their nature. It discusses the distribution of deposits by counties. Here is shown the general distribution of peat deposits in Ohio (Figure 3), giving areas of peat and location of deposits.

A geologic map index of Ohio is published by the U. S. G. S. It shows published geologic maps in a graphic manner. The material listed here includes not only that published by the Ohio Geological Survey, but also other agencies as well as individuals, who have contributed to the geologic mapping of the state. Examples of some of the material shown by this index are: Geology and Mineral Resources of the Cleveland District; Coal Fields of Ohio; Glaciation of Northwestern Holmes County; and Water Resources of Montgomery County.

