# IOWA GEOLOGICAL SURVEY IOWA CITY, IOWA

H. Garland Hershey, Director and State Geologist

# BIBLIOGRAPHY OF THE GEOLOGY OF IOWA 1960 - 1964

COMPILED AND EDITED BY

Paul J. Horick

Jean C. Prior

Eugene E. Hinman

Sponsored by The Geological Society of Iowa

Published by The State of Iowa 1967

## CONTENTS

Introduction	1
Serials	2
Bibliography	5
Index	29
Counties	29
Economic geology, mining, and metallu	rgy 32
Engineering geology	33
Geochemistry	34
Geophysics	34
Glacial geology	34
Hydrology	35
Mineralogy	36
Oil and gas	37
Paleobotany	37
Paleoecology	37
Paleontology	37
Palynology	38
Petrology and petrography	38
Physiography and geomorphology	39
Sedimentology	39
Soils	39
Stratigraphy	40
Structure	48
Miscellaneous	48
Mone	10

### BIBLIOGRAPHY OF THE GEOLOGY OF IOWA 1960 - 1964

By PAUL J. HORICK, JEAN C. PRIOR, and EUGENE E. HINMAN

### INTRODUCTION

This is the first bibliography of Iowa geology that has been published in many years. It lists published papers and articles and unpublished theses on Iowa geology for the period 1960 through 1964. Many papers dealing with the geology of adjacent states are also included because they contain important information for geologists doing research on Iowa geology.

The project was conceived and sponsored by the Research Committee of The Geological Society of Iowa. A partial bibliography of Iowa geology consisting of papers from the Iowa Academy of Science Proceedings and a list of student theses from the University of Iowa, Iowa City, and Iowa State University, Ames, was compiled by this committee for distribution to the membership of The Geological Society of Iowa in December 1963. In 1965, a special Subcommittee on Bibliography consisting of Paul J. Horick, chairman, Mrs. Jean C. Prior, and Professor Eugene E. Hinman was appointed to begin the compilation of a more complete bibliography. A concerted effort was made to review all serials that might contain pertinent data on Iowa geology beginning with the year 1960. A list of these serials is included. Some useful papers probably have been unintentionally overlooked. Omissions should be brought to the attention of the editor so they can be inserted in future bibliographies.

The citations are listed alphabetically by author, with full title and publication data. The author section of the volume is followed by a subject index to the papers cited. Geologic names in the index are those used by the individual authors.

Acknowledgement is made to the many geologists who were helpful in determining the relevancy of various papers to the bibliography. The editor is especially grateful to Professor Rudolph W. Edmund, chairman of the Research Committee of The Geological Society of Iowa, who encouraged the project and to Dr. H. Garland Hershey, State Geologist of Iowa, for publishing the bibliography. Thanks are also due to Mr. Jerry D. Vineyard for his suggestions, to Mr. Walter L. Steinhilber for assisting with publication arrangements, to Mr. Ronald W. Coble for critically reading the manuscript, to librarians Vera Bacon and Sue Young at the University of Iowa Geology Department Library, to Professor Lyle Sendlein for compiling student theses at Iowa State University, and finally to Mrs. Ruby E. Steinhilber for typing the manuscript.

### **SERIALS**

The following list gives both the abbreviated citation and the full name of the periodicals and serials that have been most commonly cited in this bibliography. A few of the less common ones are cited in the bibliography proper.

Am. Assoc. Petrol. Geologists Bull. - American Association of Petroleum Geologists Bulletin

Am. Geophys. Union Trans. - American Geophysical Union Transactions

Am. Inst. Min. Eng. Trans. - American Institute of Mining and Metallurgical Engineers Transactions

Am. Jour. Sci. - American Journal of Science

Am. Mineralogist - American Mineralogist

Am. Water Works Assoc. Jour. - American Water Works Association Journal

Ann. Assoc. Am. Geographers - Annals of the Association of American Geographers

Bull. Am. Paleontology - Bulletins of American Paleontology

Clay Min. Bull. - Clay Minerals Bulletin

Developments in Sedimentology

Dissertation Abstracts

Earth Sci. - Earth Science

Econ. Geology - Economic Geology

Econ. Geology Monograph - Economic Geology Monograph

Eng. and Min. Jour. - Engineering and Mining Journal

Eng. Geology Case Histories - Engineering Geology Case Histories

Gems and Geology

Geoexploration

Geol. Mag. - Geological Magazine

Geol. Soc. Am. Bull. - Geological Society of America Bulletin

Geol. Soc. Am. Proc. - Geological Society of America Proceedings

Geol. Soc. Am. Program - Geological Society of America Program

Geol. Soc. Am. Spec. Papers - Geological Society of America Special Papers

Geol. Soc. Am. Mem. - Geological Society of America Memoirs

Geophys. Jour. - Geophysical Journal

Geomorph. Abstracts - Geomorphological Abstracts

Geophys. Prospecting - Geophysical Prospecting

Geophysics

Geoscience Abstracts

Geotimes

IMM Abstracts - Institute of Mining and Metallurgy Abstracts

International Geological Cong. Rept. - International Geological Congress Report

International Geology Review

Iowa Acad. Sci. Proc. - Iowa Academy of Science Proceedings

Iowa Business Digest

Iowa State Jour. Sci. - Iowa State Journal of Science

Iowa Sci. Teachers Jour. - Iowa Science Teachers Journal

Jour. Geol. Educ. - Journal of Geological Education

Jour. Geology - Journal of Geology

Jour. Glaciology - Journal of Glaciology

Jour. Paleontology - Journal of Paleontology

Jour. Petrology - Journal of Petrology

Jour. Sed. Petrology - Journal of Sedimentary Petrology

Jour. Soil and Water Cons. - Journal of Soil and Water Conservation

Metal Mining and Proc. - Metal Mining and Processing

Micropaleontology

Mineralogical Abstracts

Mineralogical Magazine

Mines Magazine

Mining and Metal. Quarterly - Mining and Metallurgy Quarterly

Mining Cong. Jour. - Mining Congress Journal

Mining Eng. - Mining Engineering

Mining World

National Geog. Mag. - National Geographic Magazine

National Res. Council, Div. Earth Sci. Rept. - National Research Council, Division of Earth Science Report

Oil and Gas Jour. - Oil and Gas Journal

Palaeontology

Petroleum Newsnote

Petroleum Times

Pub. Health Eng. Abstracts - Public Health Engineering Abstracts

Rocks and Minerals

Science

Scientific American

Sedimentology

Seis. Soc. America Bull. - Seismological Society of America Bulletin

Shale Shaker

Skillings Mining Review

Soil Sci. Soc. America Proc. - Soil Science Society of America Proceedings

Soil Science

**Tectonophysick** 

The Palimpsest

The Prof. Geologist - The Professional Geologist

U. S. Bur. Mines Bull. - U. S. Bureau of Mines Bulletin

U. S. Bur. Mines Inform. Circ. - U. S. Bureau of Mines Information Circular

U. S. Bur. Mines Min. Yearbook - U. S. Bureau of Mines Minerals Yearbook

U. S. Bur. Mines Rept. Inv. - U. S. Bureau of Mines Report of Investigations

U. S. Geol. Survey Bull. - U. S. Geological Survey Bulletin

U. S. Geol. Survey Circ. - U. S. Geological Survey Circular

U. S. Geol. Survey Hydrol. Inv. Atlas - U. S. Geological Survey Hydrologic Investigations Atlas

U. S. Geol. Survey Prof. Paper - U. S. Geological Survey Professional Paper

U. S. Geol. Survey Water-Supply Paper - U. S. Geological Survey Water-Supply Paper

Water and Sewage Works

Water and Water Eng. - Water and Water Engineering

Water Power

Water Works Eng. - Water Works Engineering

World Oil

World Petroleum

### BIBLIOGRAPHY

Abernethy, Roy F.

1. (and E. M. Cochrane). Free-swelling and grindability indexes of United States coals: U. S. Bur. Mines Inform. Circ. 8025, p. 27,

Ager, Derek V.

1. The epifauna of a Devonian spiriferid: Geol. Soc. London Quart. Jour., v. 117, pt. 1, no. 465, p. 1-10, 2 figs., pl., table, 1961.

2. (and E. A. Riggs). The internal anatomy, shell growth and asymmetry of a Devonian spiriferid: Jour. Paleontology, v. 38, no. 4., p. 749-760, 11 figs., July 1961.

Aldrich, L. T.

1. (and others). Mineral age measurements and earth history: Carnegie Inst. Washington Year Book, 1959-60, p. 208-221, illus., 1960.

Anderson, Donald A.

1. (and Theodore L. Welp). An engineering report on the soils, geology, terrain, and climate of Iowa: Iowa State Highway Commission publication, 96 p., 45 figs., 8 tables, 1960.

Anderson, K. H.

1. (and J. S. Wells). New thinking may be key to unlocking Missouri prospects: Oil and Gas Jour., v. 62, no. 50, p. 122-130, illus., December 14, 1964.

Anderson, R. L. See Young, W. H., 1.

Anderson, Wayne I.

1. Upper Devonian and Lower Mississippian conodonts from northcentral Iowa: Iowa Acad. Sci. Proc., v. 71, p. 320-334, 4 figs., 3 tables, 1964.

Anonymous

1. How Northern Natural operates aquifer gas storage: Oil and Gas Jour., v. 59, no. 6, p. 116-117, cross-sectional diagram, photograph, February 6, 1961.

2. Big new LPG line in midwest planned: Oil and Gas Jour., v. 59, no. 11,

p. 90, map, March 13, 1961.

3. Mid-America line expanding: Oil and Gas Jour., v. 59, no. 15, p. 82,

April 10, 1961. 4. Mid-America programs big expansion: Oil and Gas Jour., v. 60, no. 18, p. 48, April 30, 1962.

5. Discovery makes 10 barrel per day: Oil and Gas Jour., v. 61, no. 11,

p. 78, map, March 18, 1963. 6. Atlas of products pipelines of the United States - 1963: Oil and Gas Jour., v. 61, no. 38, p. 201-226, maps, September 23, 1963.

7. Iowa in midst of biggest drilling play in its history: Oil and Gas Jour.,

v. 61, no. 42, p. 143, map, October 21, 1963. 8. Pipelining notes: Retire old, install new Mississippi crossings: Oil and Gas Jour., v. 61, no. 46, p. 191 and 193, photographs, diagram, November 18, 1963.

Arnold, Lionel K.

1. Destructive distillation products of certain Iowa carbonaceous shales: Iowa Acad. Sci. Proc., v. 69, p. 379-383, 2 tables, 1962.

Arnold, R. W. See also Slusher, D. F., 1.

1. (and L. E. Tyler and F. F. Riecken). Estimate of slope classes by counties in Iowa: Iowa Acad. Sci. Proc., v. 67, p. 260-267, map, graph, table, 1960.

Backsen, Lee B.

 Geohydrology of the aquifer supplying Ames, Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, 98 p., August 1963.

Barlow, Charles W.

(and Wayne A. Faupel). Chapter 455A, Iowa Natural Resources Council, in Volume 1, Code of Iowa 1962, sections 1.1 to 534.69: Published by the State of Iowa, p. 1646-1653, 1962.

2. Chapter 84, Natural Gas and Oil, S.F. 430, *in* Acts and joint resolutions passed at the regular session of the 60th General Assembly of the State of Iowa: Published by the State of Iowa, p. 129-141, 1963.

Baumann, Robert E.

1. (and C. S. Oulman). Iowa State: Pilot studies of diatomite filtration: Water Works Eng., v. 116, no. 5, p. 366-368, May 1963.

Beaver, Harold H.

 Morphology of the blastoid Globoblastus norwoodi: Jour. Paleontology, v. 35, no. 6, p. 1103-1112, illus., 1961.

Becker, Edith. See Durfor, Charles N., 1.

Berte, Virginia C. See Sheridan, Eugene T., 1.

Binder, Frank H.

 A Mississippian conodont fauna from Grundy County, Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, 23 p., May 1960.

Bisque, Ramon E.

1. Clay polymerization in carbonate rocks, a silicification reaction defined, in Ingerson, Earl, ed., Clays and Clay Minerals: Monograph no. 11, Earth Science Series, Permangon Press, the Macmillan Company, New York, p. 365-373, 4 pls., 1962.

Bizal, Robert B.

 Gas-storage capacity spurts: Oil and Gas Jour., v. 60, no. 20, p. 125-138, May 14, 1962.

 Gas-storage capacity to climb 7%; A nationwide look at natural-gas underground storage capacity: Oil and Gas Jour., v. 61, no. 19, p. 91-101, chart, May 13, 1963.

Boeke, Harley C.

 Treating troublesome waters—The American City (Ottumwa): v. 79, p. 100-102, February 1964, Public Health Engineering Abstracts, No. 2002, v. 44, no. 11, p. 395, November 1964.

Borschel, Ken

 Varieties of Iowa geodes: Mineralogist, v. 27, no. 12 - v. 28, no. 1, p. 251-252, December 1959 - January 1960.

Boucot, A. N.

 Callipentamerus, a new genus of brachiopod from the Silurian of Iowa: Jour. Paleontology, v. 38, no. 5, p. 887-888, pls. 143-144, September 1964.

Boylan, David R. See Wheelock, Thomas D., 1 and 2.

Boyt, Richard

1. Crinoid and starfish fossils from Le Grand, Iowa: Iowa State Department of History and Archives, Des Moines, 24 p., 1962.

 Amazing new technique for cleaning fossils: Earth Science, v. 15, no. 5, p. 217-220, 2 illus., October 1962. Bozeman, H. C.

 Two pipelines take plant output to market: Oil and Gas Jour., v. 61, no. 34, p. 78-80, map, tables, diagram, August 26, 1963.

Brock, M. E. See Heyl, Allen V., 1.

Brown, C. Ervin. See also Whitlow, Jesse W., 1, 2, and 3.

 (and Jesse W. Whitlow). Geology of the Dubuque south quadrangle: U. S. Geol. Survey Bull., 1123-A, 93 p., 18 figs., 7 pls., 1 table, 1960; Mineralogical Abstracts, v. 15, no. 5, p. 342, March 1962.

Brown, Charles N. See Hershey, H. Garland, 2.

Brush, Grace S. See Walker, P. H., 1.

Burchett, R. R.

(and V. H. Dreeszen). Configuration of pre-Pleistocene bedrock surface of southeastern Nebraska: Nebraska Geol. Survey Map, scale 1:250,000, June 1964.

Cagle, Joseph W.

1. Drift-filled valleys as ground-water sources in south-central Iowa (Abstract), in Geological Survey Research 1964: U. S. Geol. Survey Prof. Paper 501-A, p. A-32, 1964.

Carlson, Keith I.

 Corals of the Gilmore City Limestone (Mississippian) of Iowa: Jour. Paleontology, v. 38, no. 4, p. 662-666, pls. 109-110, July 1964.

Carlson, Marvin P.

 Lithostratigraphy and correlation of the Mississippian System in Nebraska: Nebraska Geol. Survey Bull. 21, 46 p., 19 figs., 3 pls., 1963.

Castellano, Rocco H.

 A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Dissertation Abstracts, p. 2750, 1962.

Christiansen, Kenneth A.

 The Collembola of Hunter's cave: Nat. Speleol. Soc. Bull., v. 23, pt. 2, p. 59-70, 2 figs., July 1960.

Chu, T. L. See Davidson, Donald T., 3.

Chu, Ting Ye. See Williams, Wayne W., 1.

Cochrane, E. M. See Abernethy, Roy F., 1.

Cole, W. A.

 (and G. F. Hanson, and W. T. Westbrook). Lightweight aggregates: Expansion properties of clays, shales, and Precambrian rocks of Wisconsin: U. S. Bur. of Mines Rept. Inv. 5906, 26 p., illus., tables, 1961.

Collins, Robert S. See Miller, David W., 1.

Collinson, Charles W. See also Scott, Alan J., 1.

1. The Kinderhook Series in the Mississippi Valley, in Kansas Geol. Soc. 26th. Ann. Field Conf., 1961; Guidebook, northeastern Missouri and west-central Illinois: Kansas Geol. Soc., (Wichita), p. 100-109, 3 figs., 1961.

- 2. (and A. J. Scott and C. B. Rexroad). Six charts showing biostratigraphic zones, and correlations based on conodonts from the Devonian and Mississippian rocks of the Upper Mississippi Valley: Illinois Geol. Survey Circ., no. 328, 32 p., 6 charts, 1962.
- Conkin, B. M. See Conkin, J. E., 1.

Conkin, J. E.

1. (and B. M. Conkin). Devonian foraminifera: Part 1, The Louisiana Limestone of Missouri and Illinois: Bull. Am. Paleontology, v. 47, no. 213, p. 53-105, 5 figs., 15 pls., 3 charts, 1964.

Coons, R. L.

1. (and G. P. Woollard, and H. G. Hershey). Regional gravity analysis of the mid-continent gravity high (Abstract): Am. Assoc. Petrol. Geol. Bull., v. 48, no. 4, p. 522, April 1964.

Cridland, Arthur A.

1. Amyelon in American coal-balls: Paleontology, v. 7, pt. 2, p. 186-209, pls., 1964.

Csanyi, L. H.

1. Bituminous mixes prepared with ungraded local aggregates: Iowa Highway Research Board Bull. 19, 65 p., 36 figs., 23 tables, November 1960.

Curry, Sharon G.

- 1. The reorientation of calcite crystals in limestone: Iowa Acad. Sci. Proc., v. 67, p. 246-248, 2 diags., 1960.
- 2. Petrofabrics of carbonate rocks determined by X-ray diffraction: M. S. thesis, Iowa State Univ., Ames, Iowa, July 1962.
- Dahl, Arthur R. See also Glenn, Jerry L., 2; and Hansen, John A., Jr. 1. 1. Missouri River studies: Alluvial morphology and Quaternary history: Dissertation Abstracts, p. 3604-3605, 1962.

Daniels, Raymond B.

1. Entrenchment of the Willow drainage ditch, Harrison County, Iowa: Am. Jour. Sci., v. 258, no. 3, p. 161-176, incl. index map, diagram and illus., March 1960; Geomorphological Abstracts, no. 2, p. 29, September 1960.

2. (and Richard L. Handy, and Gerald H. Simonson). Dark-colored bands in the thick loess of western Iowa: Jour. Geology, v. 68, no. 4, p. 450-458, 5 figs., 1 pl., July 1960; Mineralogical Abstracts, v. 15,

no. 3, p. 236, September 1961.

3. (and others). Ferrous iron content and color of sediments: Soil Sci-

4. (and others). Distribution of sodium hydrosulfite extractable manganese in some Iowa soil profiles: Soil Sci. Soc. America Proc., v. 26, no. 1, p. 75-78, 3 figs., table, February 1962.

- 5. (and others). Alluvial chronology of the Thompson Creek watershed, Harrison County, Iowa: Am. Jour. Sci., v. 261, no. 5, p. 473-487, 6 figs., 2 tables, May 1963; Geomorphological Abstracts, no. 16, p. 17, February 1964; U. S. Geological Survey Prof. Paper 475-A, (Abstract), p. A151, 1963.
- Dapples, E. C. See Sloss, L. L., 1.
- Darland, George W., Jr. See Hedges, James, 1 and 2.
- Davidson, Donald T. See also Glenn, Jerry L., 2; Handy, Richard L., 2; Hansen, John A., Jr., 1 and 2; Lyon, Craig A., 1; Sheeler, John B., 1; Wickstrom, Alden E., 1; and Williams, Wayne W., 1.

1. (and others). Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), 250 p., incl. sketch maps, diagrams, tables, and illus., December 7, 1960. Contains individual papers some of which are cited separately.

2. (and Richard L. Handy). Studies of clay fractions of southwestern Iowa loess: Mineralogical Abstracts, v. 14, no. 7, p. 467-468,

September 1960.

3. (and Richard L. Handy, and T. L. Chu). Depth studies of the Wisconsin loess in southwestern Iowa - particle size and in-place density, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 28-43, incl. sketch map, section, diagrams, table, and illus., December 7, 1960.

4. (and Richard L. Handy). Property variation in the Peorian (Wisconsin) loess of southwestern Iowa: in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 14-27, incl. index map, diagrams and tables, reprinted December 7, 1960;

originally published 1952.

5. (and others). Methods for testing engineering soils: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull 192 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 21), 308 p., incl. diagrams, tables, and illus., December 14, 1960.

6. (and others). Soil stabilization with chemicals: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 193 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 22), 340 p., incl.

diagrams and tables, May 1961.

7. (and others). Soil stabilization with cement: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 194 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 23), 161 p., incl. diagrams and tables, July 1961.

8. (and others). Soil stabilization with lime: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 195 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 25), 128 p., incl. dia-

grams and tables, July 1961.

9. (and others). Soil stabilization with lime fly ash: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 196 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 26), 272 p., incl. diagrams and tables, September 1961.

Davis, Clifford

1. (and N. William Hines). Oil and gas exploration and development problems: Iowa Farm Science, v. 18, no. 1, p. 5-7, July 1963.

de Leon, L. See Runge, E.C.A., 1.

Department of Mine Inspection

1. Report of the State mine inspector for biennial period ending December 31, 1959: State of Iowa publication, 18 p., 1960.

2. Report of the state mine inspector for biennial period ending Decem-

ber 31, 1961: State of Iowa publication, 27 p., 1962.

3. Report of the State mine inspector for the biennial period ending December 31, 1963: State of Iowa publication, 34 p., 1964.

De Young, Charles E. See Welp, T. L., 1.

Diebold, Frank E.

1. X-ray methods applied to quantitative study of carbonate rocks: M.S. thesis, Iowa State Univ., Ames, Iowa, 75 p., May 1961.

Dorheim, Fred H.

 (and Donald L. Koch). Unusual exposure of Silurian-Devonian unconformity in Loomis quarry near Denver, Iowa: Iowa Acad. Sci. Proc., v. 69, p. 341-350, 8 figs., 1962.

Dougherty, John D. See Morris, Robert L., 2.

Dow, Verne E.

 Some notes on the occurrence of a coal seam in the Cedar Valley Formation of Johnson County, Iowa: Iowa Acad. Sci. Proc., v. 67, p. 253-259, 1960.

 (and Steward D. Mettler). The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Iowa Acad. Sci. Proc., v. 69, p. 326-332, fig., 1962.

Drahovzal, James A.

1. The geology of Jefferson County, Iowa: M.S. thesis, Univ. of Iowa, 274 p., 27 figs., 13 tables, 8 pls., 1963.

Dreeszen, V. H. See Burchett, R. R., 1.

Durfor, Charles N.

 (and Edith Becker). Chemical quality of public water supplies of the United States and Puerto Rico, 1962: U.S. Geol. Survey Hydrol. Inv. Atlas HA-200, 1 sheet (text, 8 maps, 1 table), 1964.

Duvall, Wilbur I.

1. (and others). Vibrations from blasting at Iowa limestone quarries: U.S. Bur. Mines Rept. Inv. 6270, 28 p., illus., tables, 1963.

Eller, E. R.

 Scolecodonts from the Sheffield Shale, Upper Devonian of Iowa: Pittsburgh, Carnegie Inst. Mus. Annals, v. 36, art. 14, p. 159-172, 2 pls., August 1963.

Faul, A. F.

1. (and others). Aggregate source index: Iowa State Highway Commission, 1 volume, unpaged, 1960.

Faupel, Wayne A. See Barlow, Charles W., 1 and 2.

Feulner, Alvin J. See Steinhilber, Walter L., 1.

Fleener, Frank L.

 Our fascinating, enigmatic geodes: Earth Science, v. 14, no. 1, p. 24-26, 3 illus., February 1961.

Frankforter, Weldon D.

 Problems of paleontological preservation in Iowa: Iowa Acad. Sci. Proc., v. 68, p. 328-336, 1961.

 A late Wisconsin giant beaver in northern Iowa: Iowa Acad. Sci. Proc., v. 69, p. 350-353, 1962.

Frantti, G. E.

 (and D. E. Willis, and J. T. Wilson). The spectrum of seismic noise: Seis. Soc. America Bull., v. 52, no. 1, p. 113-121, January 1962.

Frerichs, William E.

 Significance of lower Burlington conodont assemblages in southeastern Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, 34 p., May 1963.

Frye, John C.

1. (and H. D. Glass, and H. B. Willman). Stratigraphy and mineralogy of

the Wisconsinan loesses of Illinois: Illinois State Geol. Survey

Circ. 334, 55 p., 3 figs., 6 tables, 1 pl., 15 geol. sections, 1962. 2. (and H. B. Willman, and H. D. Glass). Cretaceous deposits and the Illinoian glacial boundary in western Illinois: Illinois State Geol. Survey Circ. 364, 28 p., 7 figs., 5 tables, 1964.

Furnish, William M. See also Klapper, Gilbert, 1; and Rexroad, Carl B., 1.

1. Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Guidebook 27th Tri-State Geological Field Conference, 19 p., sections, 1963. (Univ. of Iowa, Dept. of Geology Library).

Geological Society of Iowa, The

1. Skyor-Hartl area, southeast Linn County, Iowa; Field Trip May 12, 1962: The Geological Society of Iowa (Iowa City) Guidebook, 4 p., map, 1962.

2. Maquoketa of northeast Iowa; Field Trip July 21, 1962: The Geological Society of Iowa (Iowa City) Guidebook, 6 p., 1962

- 3. Silurian bioherms of eastern Iowa; Field Trip May 11, 1963: The Geological Society of Iowa (Iowa City) Guidebook, 9 p., 1963.
- 4. Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: The Geological Society of Iowa (Iowa City) Guidebook, 9 p., 1963.
- 5. Southwestern Iowa; Field Trip August 22-23, 1964: The Geological Society of Iowa (Iowa City) Guidebook, 6 p., sections, 1964.

Geraghty, James J. See Miller, David W., 1.

Glass, H. D. See Frye, John C., 1 and 2.

Glenn, Jerry L.

1. Missouri River studies: Alluvial morphology and engineering soil classification: M.S. thesis, Iowa State Univ., Ames, Iowa, 125 p.,

24 figs., 11 pls., 6 tables, July 1960. 2. (and A. R. Dahl, C. J. Roy, and D. T. Davidson). Missouri River studies: Alluvial morphology and engineering soil classification: Iowa State Univ. Sci and Technol., Eng. Expt. Sta. Prog. Rept., 86 p., October 1960.

Glidden, Zelda S. See Machisak, John C., 1.

Gordon, Donivan Lewis

 A morphometric analysis of selected Iowa drainage basins: M.S. thesis, Univ. of Iowa, 193 p., 8 figs., 1 table, 9 pls., 1960.

Graham, B. F.

1. A post-Kansan peat at Grinnell, Iowa: A preliminary report: Iowa Acad. Sci. Proc., v. 69, p. 39-44, 4 figs., 1962.

Grimm, R. D.

1. Underground gas storage in aquifers: Interstate Oil Compact Comm. Bull., v. 3, no. 1, p. 8-19, illus., 1961.

Grosh, Wesley A.

1. (and H. P. Hamlin). Lightweight aggregates: Expansion properties of clays, shales, and argillites of Minnesota: U.S. Bur. Mines Rept. Inv. 6313, 30 p., illus., pls., 1963.

Guldenzopf, E. Charles

1. The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: M.S. thesis, Univ. of Iowa, Iowa City, Iowa, 253 p., 16 figs., 6 pls., 1964.

Gustavson, Samuel A. 1. The mineral industry of Iowa, in Minerals Yearbook, 1959: v. 3, Area Reports, U. S. Bur. Mines Min. Yearbook, p. 381-391, 1960.

2. The mineral industry of Iowa, in Minerals Yearbook, 1960: v. 3, Area

Reports, U. S. Bur. Mines Min. Yearbook, p. 395-406, 1961.
3. The mineral industry of Iowa, *in* Minerals Yearbook, 1961: v. 3, Area Reports, U. S. Bur. Mines Min. Yearbook, p. 393-405, 1962.

Gutschick, Raymond C.

1. Early Mississippian (Lower Carboniferous-Tournaisian) micropaleontology in the United States: International Geological Congress Report, Report of the 21st. session, Part VI, Pre-Quaternary and micropaleontology, p. 114-134, sections, charts, 1960.

Gwynne, Charles S.

1. B. H. Beane and the LeGrand crinoid hunters: Annals of Iowa, Iowa State Dept. of History and Archives, Des Moines, v. 35, no. 7, p. 481-485, 1961.

2. Conservation of geologic features in Iowa: Iowa Acad. Sci. Proc., v. 68, p. 337-340, 1961.

3. Geology in Iowa - A summary: Earth Science, v. 15, no. 3, p. 105-108, 125, 2 illus., June 1962.

4. Fossil starfish and crinoid slabs: Geotimes, v. 7, no. 1, p. 17, July-August 1962.

Hall, John W. See also Melchior, Robert C., 1.

1. Anachoropteris involuta and its attachment to a Tubicaulis type of stem from the Pennsylvanian of Iowa: Am. Jour. Botany, v. 48, no. 8, p. 731-737, illus., 1961.

2. Megaspores and other fossils in the Dakota Formation (Cenomanian) of Iowa (U.S.A.), (Abstract in French): Pollen et Spores, v. 5, no. 2, p. 425-443, 40 figs., November 1963.

Hamlin, Howard P. See Grosh, Wesley A., 1; and Sweeney, John W., 3.

Handy, Richard L. See also Daniels, Raymond B., 2; Davidson, Donald T., 2, 3, and 4; Hanway, John J., 1; Ho, Clara, 1; Lyon, Craig A., 1; and Wallace, Richard W., 1.

1. Cruising down the rivers: Iowa State Univ., Eng. Expt. Sta. Soil Research Lab., Screenings, v. 4, no. 3, p. 1-6, 16 illus., 2 maps, 1960.

2. (and Craig A. Lyon, and Donald T. Davidson). Comparisons of petrographic and engineering properties of loess in southwest, eastcentral, and northeast Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 65-80, incl. index map, diagrams, and tables, reprinted December 7, 1960; originally published 1955.

Hansen, John A., Jr.

1. (and Arthur R. Dahl, and Donald T. Davidson). Further studies of loess in Iowa-thickness, clay content, and engineering classification, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci., and Technol., Iowa Eng. Expt. Sta. Bull. 191, (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 88-92, incl. sketch maps and sections, reprinted December 7, 1960; originally published 1958.

2. (and Donald T. Davidson, and Chalmer J. Roy). Geologic and engineering properties of till and loess, southeastern Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 133-166, incl. sketch maps, diagrams, tables, and illus., December 1960.

Hansen, Robert E.

- 1. Ground water in Linn and Cerro Gordo Counties, Iowa (Abstract), in Geological Survey Research 1964, Chapter A: U. S. Geol. Survey Prof. Paper 501-A, p. A31-A32, 1964.
- Hanson, G. F. See Cole, W. A., 1.

Hanway, John J.

1. (and Richard L. Handy, and Albert D. Scott). Exchangeable potassium and clay minerals in selected Iowa soil profiles: Iowa Acad. Sci. Proc., v. 67, p. 215-231, 4 figs., 2 tables, 1960: reprinted in Davidson, D. T., Methods for testing engineering soils: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 192 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 21), 137-152, December 14, 1960.

Harms, V. L.

1. (and Gilbert A. Leisman). The anatomy and morphology of certain Cordaites leaves: Jour. Paleontology, v. 35, no. 5, p. 1041-1064, illus., 1961.

Harris, Stanley E., Jr.

1. (and Mary C. Parker). Stratigraphy of the Osage Series in southeastern Iowa: Iowa Geol. Survey Rept. Inv. 1, 52 p., 17 figs., 7 pls., 1964.

Hart, Richard R.

1. Biostratigraphic relations of the basal St. Peter Sandstone in northeast Iowa and southwest Wisconsin: Dissertation Abstracts, v. 24, no. 11, p. 4630-4631, 1964.

Harwood, Robert I.

1. Compositional variations associated with carbonate aggregate-cement paste reactions: M.S. thesis, Iowa State Univ., Ames, Iowa, 68 p., 6 figs., 1 pl., 12 tables, May 1960.

Hase, Donald H.

- 1. The Vincennes magnetic anomaly, Lee County, Iowa: Iowa Acad. Sci. Proc., v. 70, p. 240-245, 3 figs., 1963.
- 2. Geologic interpretation of magnetic map, Washington County, Iowa: Iowa Acad. Sci. Proc., v. 71, p. 284-292, 4 figs., 1964.

Haves, John B.

- 1. Mississippian geodes of the Keokuk, Iowa region: Dissertation Abstracts, v. 22, no. 2, p. 538-539, 1961.
- Kaolinite from Warsaw geodes, Keokuk region, Iowa: Iowa Acad. Sci. Proc., v. 70, p. 261-272, 6 figs., 1963.
- 3. Clay mineralogy of Mississippian strata in southeastern Iowa, in Ingerson, Earl, ed., Clays and Clay Minerals, Monograph No. 12, Earth Science Series, Permangon Press, The Macmillan Company, New York, p. 413-425, 7 figs., 1963.

  4. Geodes and concretions from the Mississippian Warsaw Formation,

Keokuk region, Iowa, Illinois, Missouri: Jour. Sed. Petrology, v. 34, no. 1, p. 123-133, 12 figs., March 1964.

5. College-level geology course for high school students: Jour. Geol. Education, v. 12, no. 4, p. 121-125, December 1964.

Hedges, James

- 1. (and George W. Darland, Jr.). Collembola of Hunter's cave discussion: Nat. Speleol. Soc. Bull., v. 24, pt. 1, p. 51-52, January 1962.
- 2. The Scotch Grove strath in Maquoketa River valley, Iowa: Iowa Acad. Sci. Proc., v. 70, p. 295-306, 3 figs., 1963.

Heim, George E.

1. (and Wallace B. Howe). Map of bedrock topography of northwestern Missouri, in Groundwater maps of Missouri: State of Missouri Division of Geol. Survey and Water Resources, (packet of 4 maps and well data summary), March 1963.

Henderson, John R.

1. (and Walter S. White, and Isidore Zietz). Preliminary interpretation of an aeromagnetic survey in north-central Iowa: U. S. Geol. Survey open file report, 27 p., maps accompanying, April 1963. (Available at Iowa Geol. Survey, Iowa City, Iowa).

2. Preliminary interpretation of an aeromagnetic survey in central and southwestern Iowa: U. S. Geol. Survey open file report, 30 p., maps accompanying, December 1963. (Available at Iowa Geol.

Survey, Iowa City, Iowa).

3. Geophysical studies in Iowa, in Geological Survey Research 1963: Summary of Investigations, U. S. Geol. Survey Prof. Paper 475-A, p. A81, 1963.

### Henkel, Charles. See Huffman, M. D., 1.

Hershey, H. Garland. See also Coons, R. L., 1.

1. Review of occurrence of the carbonate rocks in Iowa: in Industrial Minerals and Rocks, Amer. Inst. Mining, Metallurgical and Petroleum Engineers, 3rd. Ed., p. 176-178, 1 fig., 1 table, 1960.

2. (and C. N. Brown, O. Van Eck, and R. C. Northup). Highway construction materials from the consolidated rocks of southwestern Iowa: Iowa Highway Research Board Bull. 15, 151 p., 28 figs., incl. maps, sections, 1960.

3. Geology and general groundwater conditions in Davis County, Iowa, in This is Davis County, a base economic report, part 2: Iowa Employment Security Commission, Iowa State Employment

Service, p. 54-58, October 1963.

4. Geology and general ground-water conditions in Van Buren County, in This is Van Buren County, an economic base report, part 2: Iowa Employment Security Commission, Iowa State Employment Service, p. 50-58, November 1964.

Heyl, Allen V. See also Hosterman, John W., 1.1. (and John W. Hosterman, and M. E. Brock). Clay-mineral alteration in the Upper Mississippi Valley zinc-lead district, in Clays and Clay Minerals: Monograph No. 19, Earth Science Series, Permangon Press, The Macmillan Co., New York, p. 445-453, 5 figs., 1964.

1. The water resource base of Iowa: Dissertation Abstracts, v. 21, no. 6, p. 1519, December 1960.

Hiltrop, Carl L.

1. (and John Lemish). Relationship of pore-size distribution and other rock properties to serviceability of some carbonate aggregates: Natl. Acad. Sci., Natl. Research Council, Highway Research Board Bull. 239, p. 1-23, illus., 1960.

### Hines, N. William. See Davis, Clifford, 1.

Hinman, Eugene E.

1. Silurian bioherms of eastern Iowa: Dissertation Abstracts, p. 697, August 1963; The Geological Society of Iowa Guidebook (Iowa City) 9 p., May 11, 1963; in Guidebook 27th. Ann. Tri-State Geol. Field Conference, Silurian-Devonian of eastern Iowa, p. 3-5, October 1963.

Ho, Clara. See also Kelly, Wilbourne A., 1.

 (and Richard L. Handy). Electrokinetic properties of lime-treated bentonites, in Ingerson, Earl, ed., Clays and Clay Minerals: Monograph No. 19, Earth Science Series, New York, Permangon Press, The Macmillan Company, p. 267-280, 8 figs., 1964.

Holte, Karl E.

 (and Robert F. Thorne). Discovery of a calcareous fen complex in northwest Iowa: Iowa Acad. Sci. Proc., v. 69, p. 54-60, 2 figs., 1962.

Horick, Paul J.

 (and Walter L. Steinhilber). Ground water in Mississippian limestone of Iowa (Abstract), in Geological Survey Research 1964: U. S. Geol. Survey Prof. Paper 501-A, p. A32, 1964.

Hosterman, John W. See also Heyl, Allen V., 1.

 (and Allen V. Heyl, and Janice L. Jolly). Qualitative X-ray emission analysis studies of enrichment of common elements in wallrock alteration in the Upper Mississippi Valley zinc-lead district: U. S. Geol. Survey Prof. Paper 501-D, p. D54-60, 6 figs., 1964.

House, M. R.

 Observations on the ammonoid succession of the North American Devonian: Jour. Paleontology, v. 36, p. 247-284, 15 figs., 6 pls., 1962.

Howe, J. W.

 (and Richard Warnock). An analysis of the Ralston Creek hydrologic record: Iowa Highway Research Board Bull. 16, 58 p., 29 figs., 6 tables, December 1960.

Howe, Wallace B. See also Heim, George E., 1.

(and John W. Koenig). The stratigraphic succession in Missouri: Missouri Geol. Survey and Water Resources, v. 40, 2nd ser., 185 p., 27 figs., 4 tables, September 1961.

Huffman, M. D.

 (and Charles Henkel). Fossil plants from cave deposits near Pella, Marion County, Iowa: Iowa Acad. Sci. Proc., v. 68, p. 167-169, illus., 1962.

Iowa Engineering Society, Northwest Chapter

 Water Resources in Sioux City and vicinity: Iowa Engineering Society, Northwest Chapter, 40 p., tables, map, diagram, October 1963.

Iowa Natural Resources Council

 Organic act of 1949 and later amendments relating to flood control and the conservation, development, and use of the water resources of Iowa: Pamphlet published by the State of Iowa, Des Moines, 20 p., 1963.

 Eighth report of the Iowa Natural Resources Council for the biennial period July 1, 1962 – June 30, 1964: Iowa Natural Resources Council, 59 p., 4 figs., 4 pls., 7 tables, December 1964.

Iowa State Department of Health

1. Census of public water supplies for Iowa communities: Special Engineering Number, Division of Public Health Engineering, State Department of Health, 16 p., June 1961.

 Census of public water supplies for Iowa communities: Special Engineering Number, Division of Public Health Engineering, State Department of Health, 15 p., March 1964.

3. Iowa public water supply data: Division of Public Health Engineering, State Department of Health, 78 p., 1964.

Jaster, Marion C. See Withington, Charles F., 1.

Joesting, H. R. See Woollard, George P., 3.

Johnson, H. P. See Kriz, G. H., 2.

Jolly, Janice L. See Hosterman, John W., 1.

Jones, Nina L. See Moyer, Forrest T., 1.

Jones, Robert L.

1. (and others). Microfossils in Wisconsin loess and till from western Illinois and eastern Iowa: Science, v. 140, no. 3572, p. 1222-1224, 2 figs., June 14, 1963.

Kammerer, J. C. See Mackichan, K. A., 1.

Kane, Murray

 Keokuk geode area of Iowa and Missouri: Rocks and Minerals, v. 38, p. 606-607, 1963.

Kazmann, R. G.

1. New problems in hydrology: Jour. of Hydrology, v. 2, no. 2, p. 92-100,

Kearney, Naomi W. See Machisak, John C., 1 and 3.

Keener, Hazel M. See Machisak, John C., 3.

Kelley, Wilbourne, A.

1. (and Clara Ho). Clay mineralogy of a gumbotil: Iowa Acad. Sci. Proc., v. 71, p. 342-349, 1 table, 3 figs., 1964.

Klapper, Gilbert

1. (and William M. Furnish). Conodont zonation of the early Upper Devonian in eastern Iowa: Iowa Acad. Sci. Proc., v. 69, p. 400-410, 2 figs., 1962.

Klinsky, J. W. See Morris, Robert L., 1.

Knight, Robert D.

1. Groundwater areas in Missouri, in Groundwater maps of Missouri: State of Missouri Division of Geological Survey and Water Resources (packet of 4 maps and well data summary), March 1963.

Knochenmus, Darwin D.

1. Alluvial history of the Nishnabotna Valley, southwestern Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, July 1962.

Koch, Donald L. See also Dorheim, Fred H., 1.1. (and James K. Wagner, and Steward D. Mettler). Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: The Geological Society of Iowa Guidebook, 9 p., sections, July 1963. 2. The Lime Creek Formation in the area of Garner, Iowa: Iowa Acad.

Sci. Proc., v. 70, p. 245-252, 2 figs., 1963.

Koenig, John W. See also Howe, Wallace B., 1.

1. The Lincoln fold of northeastern Missouri, in Kansas Geol. Soc. 26th Ann. Field Conf., 1961 Guidebook, northeastern Missouri and westcentral Illinois: Kansas Geol. Soc., (Wichita), p. 75-80, 2 figs., 1961.

Kohls, Donald W.

1. Lithostratigraphy of the Cedar Valley Formation in Minnesota and Iowa: Dissertation Abstracts, p. 3983, 1962.

Kornfeld, Joseph A.

 Iowa's first oil well may spur 3-state play: World Oil, v. 156, no. 5, p. 137-139, April 1963.

Kriz, G. H.

 Pumping irrigation wells for drainage of Luton soils: M.S. thesis, Iowa State Univ., Ames, Iowa, 1962.

2. (and H. P. Johnson). Hydraulic characteristics of aquifers of the Missouri River flood plain near Hornick, Iowa: Iowa State Jour. of Sci.,

v. 37, no. 4, 7 figs., 2 tables, May 1963.

Krumbein, W. C. See Sloss, L. L., 1.

Lamb, Cecile. See Lamb, Maurice, 1.

Lamb, Maurice

1. (and Cecile Lamb). Some minerals found in geodes: Rocks and Minerals, v. 36, p. 576-578, 1 fig., 1961.

Lampe, R. K.

1. Fossil hunting in Iowa: Earth Science, v. 16, no. 1, p. 31-32, illus., map, February 1963.

Landes, Kenneth K.

 Chemical and metallurgical limestone in northern and northeastern States and Ontario: Am. Inst. Min. Eng. Trans., v. 220, p. 174-179, 1 fig., 1961.

Leighton, Morris M.

 The classification of the Wisconsin glacial stage of north-central United States: Jour. Geology, v. 68, no. 5, p. 529-552, 8 figs., 4 tables, September 1960.

Leisman, Gilbert A. See also Harms, V. L., 1.

1. The morphology and anatomy of *Callipteridium sullivanti* (Iowa-Kansas): Am. Jour. Botany, v. 47, no. 4, p. 281-287, April 1960.

Lemish, John. See also Hiltrop, Carl L., 1; and Vredenburgh, Larry D., 2.

1. Research on carbonate aggregate reactions in concrete: Am. Inst. Min.

Eng. Trans., v. 220, p. 195-198, 3 figs., 1961.

 (and William J. Moore). Carbonate aggregate reactions: recent studies and an approach to the problem, in Symposium on alkali-carbonate rock reactions: Highway Research Record No. 45; Natl. Acad. Sci. - Natl. Research Council, Highway Research Board publication 1167, p. 57-71, tables, 1964.

Lohnes, Robert A. See also Pedersen, David E., 1.

 Petrography of Quaternary concretions from western Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, 40 p., May 1961.

Lorenz, Philip J.

1. (and others). Background radioactivity in the Decorah fault region: Iowa Acad. Sci. Proc., v. 68, p. 397-403, 3 figs., 1961.

Lyon, Craig A. See also Handy, Richard L., 2.

(also Richard L. Handy, and Donald T. Davidson). Property variations in the Wisconsin loess of east-central Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 44-64, incl. index map, diagrams, tables, and illus., reprinted December 7, 1960, (originally published 1954).

Machisak, John C.
1. (and Naomi W. Kearney, and Zelda S. Glidden). Injury experience in quarrying, 1957: U. S. Bur. Mines Inform. Circ. 7975, 55 p., tables,

2. (and others). Injury experience in coal mining, 1955-56: U.S. Bur.

Mines Inform. Circ. 7976, 116 p., tables, 1960.

3. (Naomi W. Kearney, and Hazel M. Keener). Injury experience in the non-metal industries (except stone and coal), 1956-1957: U.S. Bur. Mines Inform. Circ. 7979, 78 p., tables, 1960.

4. (and others). Injury experience in coal mining, 1957: U.S. Bur. Mines

Inform. Circ. 7987, 72 p., tables, 1960.

- 5. Injury experience in coal mining, 1958: U. S. Bur. Mines Inform. Circ. 8026, 67 p., tables, 1961.
- 6. Injury experience in coal mining, 1959: U. S. Bur. Mines Inform. Circ. 8067, 61 p., tables, 1961.
- 7. Injury experience in quarrying, 1958: U. S. Bur. Mines Inform. Circ. 8077, 58 p., tables, 1962.
- 8. Injury experience in the non-metal industries (except stone and coal), 1958: U. S. Bur. Mines Inform. Circ. 8134, 85 p., tables, 1962.
- 9. Injury experience in coal mining, 1960: U. S. Bur. Mines Inform. Circ. 8141, 76 p., tables, 1962.
- 10. Injury experience in quarrying, 1959: U. S. Bur. Mines Inform. Circ. 8168, 56 p., tables, 1963.
- Injury experience in the non-metal industries (except stone and coal), 1959: U.S. Bur. Mines Inform. Circ. 8170, 91 p., tables, 1963.

12. Injury experience in quarrying, 1960: U. S. Bur. Mines Circ. 8171, 57 p., tables, 1963.

13. Injury experience in the non-metal industries (except stone and coal), 1960: U.S. Bur. Mines Inform. Circ. 8173, 93 p., tables, 1963.

Macurda, Donald B., Jr.

1. Dentiblastus - A new blastoid genus from the Burlington Limestone (Mississippian): Jour. Paleontology, v. 38, no. 2, p. 367-372, I fig., 1 pl., March 1964.

2. A new spiraculate blastoid, *Pyramiblastus* from the Mississippian Hampton Formation of Iowa: Michigan Univ. Mus. Paleontology Contr., v. 19, no. 8, p. 105-114, 1 fig., 1 pl., 1964.

Mackichan, K. A.

1. (and J. C. Kammerer). Estimated use of water in United States, 1960: U. S. Geol. Survey Circ. 456, 26 p., map, figs., tables, 1961.

Marshall, L. G.

- 1. Mining methods of the Fort Dodge Limestone Company, Inc., Fort Dodge, Iowa: U. S. Bur. Mines Inform. Circ. 8051, 13 p., 1962.
- 2. Mining and beneficiating methods and costs at two crushed-limestone operations, Madison County, Iowa: U. S. Bur. Mines Inform. Circ. 8199, 18 p., tables, illus., 1963.
- 3. Sand and gravel operations and costs, Concrete Materials and Construction Division, Martin Marietta Corp., West Des Moines, Iowa: U. S. Bur. Mines Inform. Circ. 8202, 14 p., tables, illus., 1963.

Martinson, E. V.

1. Underground gas storage in the northern plains, with particular reference to Northern Natural Gas Company: special pamphlet of talk presented at Natl. Assoc. of Railroad and Utility Commissioners Engineers' Conf., May 11-14, 1964, Wichita, Kansas, 11 p., figs., map, cross section, 1964. (Available from Northern Natural Gas Company, Omaha, Nebraska).

Mason, James R., Jr.

1. Petrology of the Hampton Formation at Iowa Falls, Iowa: M. S. thesis, Iowa State Univ., Ames, Iowa, 33 p., May 1961.

McComb, A. L.

1. (and F. F. Riecken). Effect of vegetation on soils in the forest-prairie region, *in* Recent advances in botany: Univ. of Toronto Press, p. 1627-1631, 1 fig., 1961.

McCracken, Mary H.

 Geologic map of Missouri: State of Missouri Division of Geological Survey and Water Resources, scale 1:500,000, 1961.

McGannon, Donald E., Jr.

A study of the St. Lawrence Formation in the Upper Mississippi Valley: Dissertation Abstracts, v. 21, no. 8, p. 2249, February 1961.

McGuinness, C. L.

- 1. The role of ground water in the national water situation: U. S. Geol.
  Survey Water-Supply Paper 1800, (section on Iowa), p. 331-341, 1963.
- 2. Generalized map showing annual runoff and productive aquifers in the conterminous United States: U. S. Geol. Survey Hydrol. Inv. Atlas HA-194, 1 sheet, scale 1:5,000,000, 1964.

McKusick, Marshall

 Men of Ancient Iowa: Iowa State University Press, Ames, Iowa, 260 p., figs., illus., tables, 1964.

Melchior, Robert C.

 (and John W. Hall). A calamitean shoot apex from the Pennsylvanian of Iowa: Am. Jour. Botany, v. 48, no. 9, p. 811-815, illus., 1961.

Menzel, Muriel

 (and Marilyn Pratt). Minerals of Pint's quarry: Earth Science, v. 17, no. 2, p. 63-67, 3 illus., map, March-April 1964.

Metal Mining and Processing, Editor

- 1. 1964 directory of major United States mining and mineral processing operations: Metal Mining and Processing, v. 1, (Section on Iowa), p. DM-20, 1964.
- Mettler, Steward D. See Dow, Verne, E., 1; and Koch, Donald L., 1.

Miller, David W.

 (and James J. Geraghty, and Robert S. Collins). Water atlas of the United States, basic facts about the nation's water resources: Water Information Center, Inc., Port Washington, Long Island, New York, 40 pls. with text, 1962.

Miller, Robert D.

- Economic significance of a buried bedrock bench beneath the Missouri River floodplain near Council Bluffs, Iowa: U. S. Geol. Survey Prof. Paper 424-B, p. B301-B303, illus., 1961.
- Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: U. S. Geol. Survey Prof. Paper 472, 70 p., 21 figs., 4 pls., maps, 3 tables, 1964.

Milling, Marcus E.

- (and Sherwood D. Tuttle). Morphometric study of two drainage basins near Iowa City, Iowa: Iowa Acad. Sci. Proc., v. 71, p. 304-319, 7 figs., 2 tables, 1964.
- Morphometric analysis of Clear Creek and Old Mans Creek, Iowa and Johnson Counties, Iowa: M. S. thesis, Univ. of Iowa, Iowa City, Iowa, 109 p., 42 figs., 1 pl., 11 tables, 1964.

Mining World, Editor

1. 1960 directory of major United States mining operations: Mining World (section on Iowa), p. 191, April 1960.

2. 1961 directory of major United States mining operations: Mining World (section on Iowa), p. DM-23, April 1961.

3. 1962 directory of major United States mining operations: Mining World (section on Iowa), p. DM-20, April 1962.

4. 1963 directory of major United States mining and mineral processing operations: Mining World (section on Iowa), p. DM-21, April 1963.

Moore, William J. See also Lemish, John, 1.

Studies of carbonate aggregate reactions: Expansion behavior; environmental effects; concrete matrix investigations: M.S. thesis, Iowa State Univ., Ames, Iowa, 64 p., May 1963.

Morris, Robert L.

 (and J. W. Klinsky). Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Iowa Acad. Sci. Proc., v. 69,

p. 396-399, table, 1962.

 (and John D. Dougherty, and Gene W. Ronald). Chemical aspects of actinomycete metabolites as contributors of taste and odor: Jour. Am. Water Works Assoc., v. 55, no. 10, p. 1380-1390, October 1963; Public Health Engineering Abstracts, No. 1624, v. 44, no. 9, p. 319, September 1964.

Mossler, John H.

 Ordovician potassium bentonites of Iowa: M.S. thesis, Univ. of Iowa, Iowa City, Iowa, 115 p., 14 figs., 2 tables, 1964.

Moyer, Forrest T.

- (and Virginia E. Wrenn, and Nina L. Jones). Injury experience in coal mining, 1961: U.S. Bur. Mines Inform. Circ. 8210, 77 p., tables, 1963.
- 2. (and others). Injury experience in coal mining, 1962: U. S. Bur. Mines Inform. Circ. 8232, 82 p., tables, 1964.

Musgrove, Jack W.

1. Crinoids and starfish added to Iowa collection: Earth Science, v. 15, no. 4, p. 162-164, 3 illus., August 1962.

Myers, Richard E.

- Surface water resources of Iowa, October 1, 1955 to September 30, 1960: Iowa Geol. Survey Water-Supply Bull., no. 8, 526 p., 1963.
- Floods at Des Moines, Iowa: U.S. Geol. Survey Hydrol. Inv. Atlas HA-53, map, figs., 1963.

Nixon, Paul R.

1. (and Glenn D. Schwab). Water yield prediction in southern Iowa based on watershed characteristics: Iowa State Jour. Sci., v. 35, no. 3, p. 331-342, 5 figs., 4 tables, February 1961.

Northern Natural Gas Company

 Potential for a lime plant in north-central Iowa: Area Development Department Report, Northern Natural Gas Company, Omaha, Nebraska, 19 p., 1964.

Northup, Richard C. See Hershey, H. Garland, 2.

O'Donnell, John P.

1. Mid-America charts third big expansion: Oil and Gas Jour., v. 61, no. 19, p. 58-59, 1 map, 1 chart, May 13, 1963.

Olson, Donald L.

- Acidized wells brought back to full production: Water Works Eng., v. 115, no. 6, p. 468, 505, June 1962.
- Oulman, C. S. See Baumann, Robert E., 1.

Parker, Mary C. See also Harris, Stanley E., Jr., 1.

 Preliminary structure map of southeastern Iowa, 1961: datum, base of Osage Series, Burlington Limestone: Iowa Geol. Survey, scale 1:400,000, [1963].

Parsons, R. B.

(and others). Soils of Indian mounds in northeastern Iowa as benchmarks for studies of soil genesis: Soil Sci. Soc. Am. Proc., v. 26, no. 5, p. 491-496, 2 figs., 3 tables, October 1962; Geomorphological Abstracts, no. 16, p. 9, February 1964.

Pedersen, David E.

- (and Robert A. Lohnes). Preliminary investigation of the Little Sioux River valley: Iowa Acad. Sci. Proc., v. 70, p. 326-333, 5 figs., 1963.
- Alluvial morphology of the Little Sioux River valley in western Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, 81 p., November 1963.

Perry, T. G.

 Spechts Ferry (Middle Ordovician) bryozoan fauna from Illinois, Wisconsin, and Iowa: Illinois State Geol. Survey Circ. 326, 36 p., 4 figs., 8 pls., 1962.

Phillips, J. A.

 (and Frank F. Riecken). Characteristics of the Floyd and some related soils in Floyd and Bremer Counties Iowa: Iowa Acad. Sci. Proc., v. 67, p. 277-289, 4 figs., 1960.

Piper, Arthur M.

 Interpretation and current status of ground-water rights: U. S. Geol. Survey Circ. 432, 10 p., 1960.

Pitrat, Charles W.

- Devonian corals from the Cedar Valley Limestone of Iowa: Jour. Paleontology, v. 35, no. 6, p. 1155-1162, pls. 158-159, November 1962.
- Poetsch, Ernst. See Riecken, Frank F., 1.
- Pratt, Marilyn. See Menzel, Muriel, 1.
- Protz, R. See Slusher, D. F., 1.

Rainwater, F. H.

 Stream composition of the conterminous United States: U. S. Geol. Survey Hydrol. Inv. Atlas. HA-61, 3 sheets, 1962.

Reed, Paul

 NGP (Natural Gas Pipeline Co.) gambles on single-line submerged Missouri River crossings: Oil and Gas Jour., v. 59, no. 9, p. 88-89, illus., February 27, 1961.

Rexroad, Carl B. See also Collinson, Charles W., 2.

(and William M. Furnish). Conodonts from the Pella Formation (Mississippian), south-central Iowa: Jour. Paleontology, v. 38, no. 4, p. 667-676, 1 fig., 3 pls., July 1964.

Rhoads, Donald C.

1. Microfossils of problematical affinity from the Maquoketa Formation

of eastern Iowa and western Illinois: Jour. Paleontology, v. 36, no. 6, p. 1334-1340, pl. 178, 3 figs., November 1962.

Riecken, Frank F. See also Arnold, R. W., 1; McComb, A. L., 1; and Phillips,

J. A., 1.

1. (and Ernst Poetsch). Genesis and classification considerations of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Iowa Acad. Sci. Proc., v. 67, p. 268-276, 4 figs., 1 map, 1960.

Riggs, E. A. See Agar, Derek V., 2.

Riley, B. G. See Schaller, F. W., 1.

Rodis, Harry G. See Schneider, Robert, 1.

Ronald, Gene W. See Morris, Robert L., 2.

Ross, Charles A.

1. Early Silurian graptolites from the Edgewood Formation of Iowa: Jour. Paleontology, Paleontological Notes, v. 38, no. 6, p. 1107-1108, 2 figs., November 1964.

Roy, Chalmer J. See Glenn, Jerry L., 2; and Hansen, John A., Jr., 2.

Ruhe, Robert V.

1. Elements of the soil landscape: Internat. Cong. Soil Sci., 7th, Madison, Wisconsin, 1960, Trans., v. 4, comm. 5, p. 165-170, incl. diagrams, 1 table, and French and German summaries, 1960.

Runge, E. C. A.

1. (and L. deLeon). Distribution of manganese in a bio-topo sequence of southeastern Iowa soils: Iowa Acad. Sci. Proc., v. 67, p. 232-236, 1 fig., 1960.

Salisbury, Neil E.

Agricultural productivity and physical resource base of Iowa: Iowa Business Digest, v. 31, no. 2, p. 27-31, 4 figs., February 1960.

Sartenaer, Paul

1. Refonte du genre Pugnoides Weller, S. 1910 (Rhynchonelloidea): Belgique Inst. Royal Sci. Nat. Bull., v. 40, no. 12, 10 p., illus., 1964.

Schafer, J. P.

1. Pleistocene frost action in and near northeastern Iowa (Abstract): Geol. Soc. Am. Spec. Papers No. 68, p. 262, 1962.

Schaller, F. W.

1. (and B. G. Riley). The water problem in Iowa: Agriculture and Home Economies Expt. Sta. Bull. P122, 24 p., 1960.

Schenk, Paul E.

1. The environment of cyclic sedimentation and the paleoecology of the Altamont Formation (Desmoinesian) of Iowa, Missouri, Kansas, and northeastern Oklahoma (Abstract): Dissertation Abstracts, p. 1578, October 1963.

Schmidt, B. L.

1. Methods of controlling erosion on newly-seeded highway backslopes in Iowa: Iowa Highway Research Board Bull. 24, 47 p., 8 figs., 16 tables, April 1961.

2. (and others). Relative erodibility of three loess-derived soils in southwestern Iowa: Soil Sci. Soc. Am. Proc., v. 28, no. 4, p. 570-574,

9 figs., July-August 1964.

Schwab, Glenn D. See Nixon, Paul R., 1.

Schwob, Harlan H.

1. Cedar River basin floods: Iowa Highway Research Board Bull. 27,

57 p., 2 figs., 32 pls., 4 tables, June 1963. 2. Water resources of the English River, Old Mans Creek, and Clear Creek basins in Iowa: U. S. Geol. Survey Open-file Report, 53 p., 12 figs., 1 pl., 3 tables, October 1964. (Available from the Hydraulies Laboratory, Iowa City, Iowa).

Scott, Alan J. See also Collinson, Charles W., 2.

1. Conodont faunas from the Louisiana and McCraney Formations of Illinois, Iowa, and Missouri, in Kansas Geol. Soc. 26th Ann. Field Conf., 1961 Guidebook, Northeastern Missouri and west-central Illinois: Kansas Geol. Soc., (Wichita), p. 110-141, 5 figs., 1961.

Scott, Albert D. See Hanway, John J., 1.

Sheeler, John B.

1. (and Donald T. Davidson). Further correlation of consistency limits of Iowa loess with clay content, in Davidson, D. T., Methods for testing engineering soils: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 192 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 21), p. 221-226, incl. sketch map, diagrams, and tables, reprinted December 14, 1960. (Originally published 1957).

Sheridan, Eugene T.

1. (and Virginia C. Berte). Peat producers in United States in 1960: U. S. Bur. Mines Inform. Circ. 8041, 11 p., 1961.

Shuler, W. R.

1. Harness for America's Missouri River: Water Power, p. 423-432, 12 figs., November 1961.

Simonson, Gerald H. See Daniels, Raymond B., 2.

Sloss, L. L.

1. (and E. E. Dapples, and W. C. Krumbein). Lithofacies maps, an atlas of the United States and southern Canada: John Wiley & Sons, Inc., New York, 108 p., 153 maps, tables, 1960.

Slusher, D. F.

1. (and R. W. Arnold, and R. Protz). Extent and distribution of soil in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Iowa Acad. Sci. Proc., v. 68, p. 380-396, 4 figs., 3 tables, 1961.

Spreng, Alfred C.

1. The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri, in Kansas Geol. Soc. 26th Ann. Field Conf., 1961, Guidebook, north-eastern Missouri and west-central Illinois: Kansas Geol. Soc., (Wichita), p. 149-155, 1 table, 1961.

Steele, Leon L.

1. Ground-water levels in the United States 1957-1961, north-central States: U. S. Geol. Survey Water-Supply Paper 1781, (Chapter on Iowa), p. 7-23, 1 fig., 1964.

Steinhilber, Walter L. See also Horick, Paul J., 1.

1. (and Orville J. Van Eck, and Alvin J. Feulner). Geology and ground-water resources of Clayton County, Iowa: Iowa Geol. Survey Water-Supply Bull. 7, 142 p., 23 figs., 9 pls., 8 tables, 2 maps, 1961. Steiner, Richard J.

1. The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: M.S. thesis, Univ. of Iowa, Iowa City, Iowa, 61 p., 12 figs., 1 table, 2 pls., 1961.

Stone, John E.

1. Pleistocene geology of Clark County, northeastern Missouri: Dissertation Abstracts, v. 21, no. 10, p. 3061-3062, April 1961.

Sweeney, John W.

 The mineral industry of Iowa, in Minerals Yearbook, 1962, v. 3, Area Reports: U. S. Bur. Mines Min. Yearbook, p. 409-422, 1963.

- The mineral industry of Iowa, in Minerals Yearbook, 1963: U. S. Bur. Mines Min. Yearbook, v. 3, Area Reports: Domestic, p. 411-426, 1964.
- (and Howard P. Hamlin). Lightweight aggregates: Expansion properties of selected Iowa shales, clays, and loess: U. S. Bur. Mines Rept. Inv. 6393, 33 p., 3 figs., 7 tables, 1964.

Takahashi, Taro

 Supergene alteration of zinc and lead deposits in limestone: Econ. Geology, v. 55, no. 6, p. 1083-1115, 9 figs., 8 tables, September-October 1960.

Thomas, Leo A.

 Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Tri-State Geological Field Conference, 25 p., figs., tables, sections, 1960.

Thomas, Robert E.

1. (and others). First major all-LPG pipeline will be operating by December: Oil and Gas Jour., v. 58, no. 41, p. 125-161, maps, photographs, diagrams, October 10, 1960.

Tripp, Richard B.

1. Inclusive minerals of the Keokuk geodes: Earth Science, v. 15, no. 1, p. 28, 2 illus., February 1961.

Tri-State Geological Field Conference

- 1. Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Tri-State Geological Conference, 25 p., figs., tables, sections, 1960.
- Guidebook for the twenty-seventh annual Tri-State Geological Field Conference, Devonian-Silurian of eastern Iowa, October 26 and 27, 1963: Tri-State Geological Conference, 19 p., sections, 1963.

Tuttle, Sherwood D. See Milling, Marcus E., 1.

Tyler, L. E. See also Arnold, R. W., 1.

1. (and others). Properties and genesis of soils developed in very firm till in northeastern Iowa: Soil Sci. Soc. Am. Proc., v. 26, no. 3, p. 275-281, 4 figs., 4 tables, June 1962.

U. S. Bureau of Mines

- Minerals Yearbook, 1959, v. 1, metals and minerals, (except fuels): U. S. Bur. Mines Min. Yearbook, 1271 p., 1960.
- Minerals Yearbook, 1959, v. 2, fuels: U. S. Bur. Mines Min. Yearbook, 483 p., 1960.
- 3. Minerals Yearbook, 1959, v. 3, area reports: U. S. Bur. Mines Min. Yearbook, 1134 p., 1960.
- Minerals Yearbook, 1960, v. 1, metals and minerals (except fuels): U. S. Bur. Mines Min. Yearbook, 1294 p., 1961.
- Minerals Yearbook, 1960, v. 2, fuels: U. S. Bur. Mines Min. Yearbook, 509 p., 1961.

6. Minerals Yearbook, 1960, v. 3, area reports: U. S. Bur. Mines Min. Yearbook, 1161 p., 1961.
7. Minerals Yearbook, 1961, v. 1, metals and minerals (except fuels):

U. S. Bur. Mines Min. Yearbook, 1417 p., 1962.

8. Minerals Yearbook, 1961, v. 2, fuels: U. S. Bur. Mines Min. Year-

book, 498 p., 1962. 9. Minerals Yearbook, 1961, v. 3, area reports: U. S. Bur. Mines Min.

Yearbook, 1173 p., 1962.

Minerals Yearbook, 1962, v. 1, metals and minerals (except fuels): U. S. Bur. Mines Min. Yearbook, 1410 p., 1963.
 Minerals Yearbook, 1962, v. 2, fuels: U. S. Bur. Mines Min. Year-

book, 531 p., 1963. 12. Minerals Yearbook, 1962, v. 3, area reports: U. S. Bur. Mines Min.

Yearbook, 1206 p., 1963.

13. Minerals Yearbook, 1963, v. 1, metals and minerals (except fuels): U. S. Bur. Mines Min. Yearbook, 1307 p., 1964.

14. Minerals Yearbook, 1963, v. 2, fuels: U. S. Bur. Mines Min. Yearbook, 533 p., 1964.

15. Minerals Yearbook, 1963, v. 3, area reports, domestic: U. S. Bur. Mines Min. Yearbook, 1235 p., 1964.

### U. S. Dept. of Agriculture

Soil survey Polk County, Iowa: U. S. Dept. of Agriculture, Soil Cons. Service, Iowa Agriculture Expt. Sta., Soil Survey Series 1953,

No. 9, 96 p., 9 figs., 6 tables, maps, 1960. 2. Soil survey Jefferson County, Iowa: U. S. Dept. of Agriculture, Soil Cons. Service, Iowa Agricultural Expt. Sta., Soil Survey Series 1954, No. 8, 62 p., 9 figs., 14 tables, maps, 1960.

3. Soil survey Lucas County, Iowa: U. S. Dept. of Agriculture, Soil Cons. Service, Iowa Agriculture Expt. Sta., Soil Survey Series 1956, No. 6, 29 p., 13 figs., 10 tables, maps, 1960. 4. Soil survey Shelby County, Iowa: U. S. Dept. of Agriculture, Soil

Cons. Service, Iowa Agriculture Expt. Sta., Soil Survey Series 1956, No. 16, 61 p., 9 figs., 18 tables, maps, 1961.

5. Soil survey Humboldt County, Iowa: U. S. Dept. of Agriculture, Soil Cons. Service, Iowa Agriculture Expt. Sta., Soil Survey Series 1956, No. 18, 71 p., 7 figs., 9 tables, maps, 1961.

6. Atlas of river basins of the United States: U. S. Dept. of Agriculture, Soil Cons. Service, 81 maps, brief text on land resource areas and great soil groups, June 1963.

### U. S. Dept. of Health, Education, and Welfare - Public Health Service

1. Municipal water facilities, communities of 25,000 population and over, as of January 1, 1964: U. S. Dept. of Health, Education, and Welfare, Public Health Service Publication No. 661, (section on Iowa) p. 76-78, 1964.

2. 1963 inventory municipal water facilities, region VI: U. S. Dept. of Health, Education, and Welfare, Public Health Service Publication

No. 775 (revised), v. 6, (section on Iowa) p. 2-28, 1964.

### U. S. Geological Survey

1. Surface water supply of the United States 1958, Part 5, Hudson Bay and Upper Mississippi River basins: U. S. Geol. Survey Water-Supply Paper 1558, 638 p., 2 figs., 1960.

2. Surface water supply of the United States 1958, Part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1559, 434 p., 3 figs., 1960.

 Surface water supply of the United States 1958, Part 6-B, Missouri River basin below Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1560, 504 p., 2 figs., 1960.

Surface water supply of the United States 1959, Part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1629, 415 p., 2 figs., 1960.

5. Surface water supply of the United States 1959, Part 6-B, Missouri River basin below Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1630, 474 p., 2 figs., 1960.

6. Surface water supply of the United States 1959, Part 5, Hudson Bay and Upper Mississippi River basins: U. S. Geol. Survey Water-

Supply Paper 1628, 562 p., 2 figs., 1961.
7. Surface water supply of the United States 1960, Part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1709, 449 p., 2 figs., 1961. 8. Surface water supply of the United States 1960, Part 6-B, Missouri

River basin below Sioux City, Iowa: U. S. Geol. Survey Water-

Supply Paper 1710, 491 p., 2 figs., 1961.

9. Quality of surface waters of the United States 1957, Parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey Water-Supply Paper 1521, 383 p., 1 fig., 1961.

10. Quality of surface waters of the United States 1958, Parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey Water-Supply Paper 1572, 365 p.,

1 fig., 1962.

11. Summary of floods in the United States during 1958, U. S. Geol. Survey Water-Supply Paper 1660-B, (Iowa) p. 38-39, 56-61, 83-85, figures, tables, 1963.

12. Quality of surface waters of the United States 1962, Parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey Water-Supply Paper 1943, 413 p., 1964.

13. Compilation of records of surface waters of the United States, October 1950, to September 1960, Part 5, Hudson Bay and Upper Mississippi River basins: U. S. Geol. Survey Water-Supply Paper 1728,

576 p., 1 fig., 1 pl., 1964.

 Compilation of records of surface waters of the United States, October 1950, to September 1960, Part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1729, 507 p., 1 fig., 1 pl., 1964.

15. Compilation of records of surface waters of the United States, October 1950, to September 1960, Part 6-B, Missouri River basin below Sioux City, Iowa: U. S. Geol. Survey Water-Supply Paper 1730, 514 p., 1 fig., 1 pl., 1964.

16. Summary of floods in the United States during 1956: U. S. Geol. Survey Water-Supply Paper 1530, (Iowa) p. 56-59, 2 figs., 2 tables, 1964.

Valentine, Robert M.

1. A subsurface geological study of the Redfield gas storage area: M.S. thesis, Univ. of Iowa, Iowa City, Iowa, 68 p., 8 figs., 20 pls., 2 charts, 1960.

Vander Ley, John W.

1. Petrology of the Hampton Formation at Eagle City, Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, February 1962.

Van Eck, Orville J. See Hershey, H. Garland, 2; and Steinhilber, Walter L., 1.

Venkatachala, B. S. See Wilson, L. R., 1.

Vredenburgh, Larry D.

1. Reactivity and expansion phenomena as related to physical properties of carbonate rocks: M.S. thesis, Iowa State Univ., Ames, Iowa, 97 p., May 1964.

2. (and John Lemish). Evaluation of autoclave induced expansion of some Iowa carbonate rocks: Iowa Acad. Sci. Proc., v. 71, p. 335-

341, 3 figs., 1 table, 1964.

Wagner, James K. See also Koch, Donald L., 1.

1. Stratigraphic studies of the Gilmore City Formation at Rutland, Iowa: Iowa Acad. Sci. Proc., v. 67, p. 249-252, 1 fig., 1960.

Walker, P. H.

 (and G. S. Brush). Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Iowa Acad. Sci. Proc., v. 70, p. 253-260, 3 figs., 1 table, 1963.

Wallace, Charles M.

 Relationships of pore size to texture in some carbonate rocks: M.S. thesis, Iowa State Univ., Ames, Iowa, 37 p., July 1962.

Wallace, Richard W.

 (and Richard L. Handy). Stone lines on Cary till: Iowa Acad. Sci. Proc., v. 68, p. 372-379, 3 figs., 1 table, 1961.

 Initial erosion effects on Cary drift plain, central Iowa: M.S. thesis, Iowa State Univ., Ames, Iowa, 59 p., July 1961.

Warnock, Richard. See Howe, J. W., 1.

Wells, J. S. See Anderson, K. H., 1.

Welp, Theodore L. See also Anderson, Donald A., 1.

 (and Clarence E. DeYoung). Variations in performance of concrete with carbonate aggregates in Iowa, in Symposium on alkali-carbonate rock reactions: Highway Research Record No. 45, Natl. Acad. Sci. — Natl. Research Council, Highway Research Board publication 1167, p. 159-177, tables, 1964.

Werner, Michael A.

 Equilibria in cement paste-carbonate aggregate reactions: M.S. thesis, Iowa State Univ., Ames, Iowa, 90 p., 24 figs., 21 tables, February 1962.

Westbrook, W. T. See Cole, W. A., 1.

Wheelock, Thomas D.

- 1. (and David R. Boylan). Reductive decomposition of gypsum by carbon monoxide: Industrial and Engineering Chemistry, v. 52, p. 215-218, March 1960.
- 2. Production of sulphur dioxide and lime from calcium sulphate: The Industrial Chemist, v. 36, p. 590-594, December 1960.

White, W. D.

 Pennsylvanian fossils of eastern Nebraska and western Iowa: Part I: Earth Science, v. 17, no. 5, p. 202-208, 28 figs., September-October 1964.

White, Walter S. See Henderson, John R., 1, 2, and 3.

Whitlow, Jesse W. See also Brown, C. Ervin, 1.

 (and C. Ervin Brown). Geologic studies in Iowa, in Geological Survey Research 1963, Summary of Investigations: U. S. Geol. Survey Prof. Paper 475-A, p. A81, 1963.

 (and C. Ervin Brown). The Ordovician-Silurian contact in Dubuque County, Iowa: U. S. Geol. Survey Prof. Paper 475-C, p. C11-C13, 2 figs., 1963.

 (and C. Ervin Brown). Geology of the Dubuque north quadrangle, Iowa-Wisconsin-Illinois: U. S. Geol. Survey Bull. 1123-C, p. 139-168, 3 figs., 2 plates, geologic map, scale 1:24,000, 1963.

Wickstrom, Alden E.

1. (and Donald T. Davidson). Fine sands in eastern Iowa-a study of

their geological and engineering properties, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 167-231, incl. sketch maps, diagrams, tables, and illus., December 1960.

Williams, Wayne W.

(and Donald T. Davidson, and Ting Ye Chu). Properties of five Iowa fine sands, in Geologic and engineering properties of Pleistocene materials in Iowa: Iowa State Univ. Sci. and Technol., Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20) p. 232-250, incl. index and sketch maps, diagrams, and tables, reprinted December 7, 1960; originally published 1954.

Willis, D. E. See also Frantti, G. E., 1.

1. A note on the effect of ripple firing on the spectra of quarry shots: Seis. Soc. of America Bull., v. 53, no. 1, p. 79-85, January 1963.

Willman, H. B. See Frye, John C., 1 and 2.

Wilson, J. T. See Frantti, G. E., 1.

Wilson, L. R.

 (and B. S. Venkatachala). Potonieisporites elegans (Wilson and Kosanke, 1944) Wilson and Venkatachala Comb. Nov.: Oklahoma Geology Notes, v. 24, no. 3, p. 67-68, 2 figs., March 1964.

Withington, Charles F.

 (and Marion C. Jaster). Selected annotated bibliography of gypsum and anhydrite in the United States and Puerto Rico: U. S. Geol. Survey Bull. 1105, 126 p., 1960.

Woollard, George P. See also Coons, R. L., 1.

 The Woods Hole-University of Wisconsin international network of gravimeter bases, in International gravity measurements: Geophysical and Polar Research Center, Univ. of Wisconsin Contribution No. 51, p. 97, October 1963.

tribution No. 51, p. 97, October 1963.

2. Iowa gravity control and regional Bouguer anomaly map, in International gravity measurements: Geophysical and Polar Research Center, Univ. of Wisconsin Contribution No. 51, p. 357, October

1963.

3. (and H. R. Joesting). Bouguer gravity anomaly map of the United States (exclusive of Alaska and Hawaii): Am. Geophys. Union and U. S. Geol. Survey, 2 sheets, scale 1:2,500,000, 1964. (Available from U. S. Geological Survey, Washington, D. C.).

Wrenn, Virginia E. See Moyer, Forrest T., 1.

Young, W. H.

 (and R. L. Anderson). Thickness of bituminous coal and lignite seams mined in 1960: U. S. Bur. Mines Inform. Circ. 8118, 19 p., tables, 1962.

Zietz, Isidore. See Henderson, John R., 1, 2, and 3.

### COUNTIES

Adair

A morphometric analysis of selected Iowa

drainage basins: Gordon, 1.

Genesis and classification considerations of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Elements of the soil landscape: Ruhe, 1.

Allamakee

Maquoketa of northeast Iowa; Field Trip July 21, 1962: Geological Society of Iowa,

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

Appanoose

Free-swelling and grindability indexes of United States coals: Abernethy, 1.

Destructive distillation products of certain Iowa carbonaceous shales: Arnold, L. K., 1.

The epifauna of a Devonian spiriferid: Ager,

The internal anatomy, shell growth and asymmetry of a Devonian spiriferid: Ager, 2

Chemical aspects of actinomycete metabolites as contributors of taste and odor: Morris, 2.

Devonian corals from the Cedar Valley Lime-stone of Iowa: Pitrat, 1.

Black Hawk

Minerals at Pint's quarry: Menzel, 1.

Chemical aspects of actinomycete metabolites as contributors of taste and odor: Morris, 2.

Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Walker, I. Stone lines on Cary till: Wallace, R. W. I.

Unusual exposure of Silurian-Devonian unconformity in Loomis quarry near Denver, Iowa: Dorheim, 1. Characteristics of the Floyd and some re-

lated soils in Floyd and Bremer Counties, Iowa: Phillips, 1.

Buchanan

Devonian corals from the Cedar Valley Limestone of Iowa: Pitrat, 1.

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

Cedar

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference Silurian bioherms of eastern Iowa: Hin-

Chemical and metallurgical limestone in northern and northeastern states and On-

tario: Landes, 1. The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: Steiner, 1.

Cerro Gordo

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1.

Drift-filled valleys as ground-water sources in south-central Iowa (Abstract): Cagle, 1.

Clayton

The conodont fauna and stratigraphy of the

Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Ordovician potassium bentonites of Iowa: Mossler, 1.

Spechts Ferry (Middle Ordovician) bryo-zoan fauna from Illinois, Wisconsin, and Iowa: Perry, 1. Geology and ground-water resources of

Clayton County, Iowa: Steinhilber, 1.

Clinton

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2.

A morphometric analysis of selected Iowa drainage basins: Gordon, 1. The Scotch Grove strath in Maquoketa River

valley, Iowa: Hedges, 2.

Gas-storage capacity to climb 7%; a nationwide look at natural-gas underground storage capacity: Bizal, 2.

Underground gas storage in aquifers: Grimm,

Underground gas storage in the northern plains, with particular reference to North-ern Natural Gas Company: Martinson, 1.

subsurface geological study of the Redfield gas-storage area: Valentine, 1.

Free-swelling and grindability indexes of

United States coals: Abernethy, 1. Geology and general ground-water conditions in Davis County, Iowa: Hershey, 3.

Decatur

Drift-filled valleys as ground-water sources in south-central Iowa (Abstract): Cagle, 1.

Delaware

The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Chemical and metallurgical limestone in northern and northeastern states and Ontario: Landes, 1.

Des Moines

A new spiraculate blastoid, Pyramiblastus from the Mississippian Hampton Formation of Iowa: Macurda, 2.

Discovery of a calcareous fen complex in northwest Iowa: Holte, 1.

Dubuque

Geology of the Dubuque south quadrangle: Brown, 1

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Qualitative X-ray emission analysis studies of enrichment of common elements in wallrock alteration in the Upper Mississippi Valley zinc-lead district: Hosterman,

Spechts Ferry (Middle Ordovician) bryozoan fauna from Illinois, Wisconsin, and Iowa: Perry, 1.

Supergene alteration of zinc and lead de-posits in limestone: Takahashi, 1.

Geologic studies in Iowa: Whitlow, 1. The Ordovician-Silurian contact in Dubuque County, Iowa: Whitlow, 2. Geology of the Dubuque north Quadrangle:

Whitlow, 3.

Fayette

Maquoketa of northeast Iowa; Field Trip July 21, 1962: Geological Society of Iowa,

The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Floyd

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

Characteristics of the Floyd and some related soils in Floyd and Bremer Counties, Iowa: Phillips, 1.

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1

Scolecodonts from the Sheffield Shale, Upper Devonian of Iowa: Eller, 1.

Fremont

Southwestern Iowa; Field Trip August 22-23, 1964: Geological Society of Iowa, 5.

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

A Mississippian conodont fauna from Grundy County, Iowa: Binder, 1.

Hamilton

Vibrations from blasting at Iowa limestone quarries: Duvall, 1.

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological

Field Conference, 1. Observations of bog and pollen stratigraphy

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

of the Des Moines glacial lobe: Walker, I.

A late Wisconsin giant beaver in northern

Jowa: Frankforter, 2.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1. The Lime Creek Formation in the area of

Garner, Iowa: Koch, 2. Observations of bog and pollen stratigraphy

of the Des Moines glacial lobe: Walker, 1.

Hardin

Vibrations from blasting at Iowa limestone quarries: Duvall, 1. Petrology of the Hampton Formation at

Iowa Falls, Iowa: Mason, 1

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, northcentral Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological Field Conference, 1.

Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Walker, I. A note on the effect of ripple firing on the spectra of quarry shots: Willis, I. Petrology of the Hampton Formation at

Eagle City, Iowa: Vander Ley, 1.

Harrison

Entrenchment of the Willow drainage ditch, Harrison County, Iowa: Daniels, 1. Alluvial chronology of the Thompson Creek

watershed, Harrison County, Iowa: Daniels. 5.

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

Clay mineralogy of Mississippian strata in southeastern Iowa: Haves, 3,

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Ordovician potassium bentonites of Iowa: Mossler, 1

Properties and genesis of soils developed in very firm till in northeastern Iowa: Tyler, 1.

Humboldt

Corals of the Gilmore City Limestone (Mississippian) of Iowa: Carlson, K. J., 1.
Vibrations from blasting at Iowa limestone

quarries: Duvall, 1.

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960; Thomas, L. A., 1; Tri-State Geological Field Conference, 1. Soil survey Humboldt County, Iowa: U. S.

Department of Agriculture, 5

Stratigraphic studies of the Gilmore City Formation at Rutland, Iowa: Wagner, 1.

Morphometric study of two drainage basins near Iowa City, Iowa: Milling, 1. Morphometric analysis of Clear Creek and Old Mans Creek, Iowa and Johnson Counties, Iowa: Milling, 2.

Water resources of the English River, Old Mans Creek and Clear Creek basins in Iowa: Schwob, 2.

Jackson

The Collembola of Hunter's cave: Christiansen, 1.

Bioherms and biostromes of the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference,

The conodont fauna and stratigraphy of the Pecatonica Member of the Formation: Guldenzopf, 1. Platteville

Collembola of Hunter's cave - discussion: Hedges, 1. The Scotch Grove strath in Maquoketa River

valley, Iowa: Hedges, 2.

Early Silurian graptolites from the Edgewood Formation of Iowa: Ross, 1.

**Tefferson** 

The geology of Jefferson County, Iowa: Drahovzal, 1.

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Soil survey Jefferson County, Iowa: U. S.

Department of Agriculture, 2.

Tohnson

Some notes on the occurrence of a coal seam in the Cedar Valley Formation of Johnson County, Iowa: Dow, I. Bioherms and biostromes in the Silurian-

Devonian of eastern Iowa: Furnish, I; Tri-State Geological Field Conference, 2. Morphometric analysis of Clear Creek and

Old Mans Creek, Iowa and Johnson Counties, Iowa: Milling, 2.

Devonian corals from the Cedar Valley

Limestone of Iowa: Pitrat, 1.

Water resources of the English River, Old Mans Creek, and Clear Creek basins in Iowa: Schwob, 2.

The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: Steiner, L

Callipentamerus, a new genus of brachiopod from the Silurian of Iowa: Boucot, 1.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2. The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Keokuk

Clay mineralogy of a gumbotil: Kelley, 1. The morphology and anatomy of Callipteridum sullivanti (Iowa-Kansas): Leisman,

A calamitean shoot apex from the Pennsylvanian of Iowa: Melchior, 1.

Water resources of the English River, Old Mans Creek, and Clear Creek basins in Iowa: Schwob, 2.

Lee

The spectrum of seismic noise: Frantti, 1. The Vincennes magnetic anomaly, Lee County, Iowa: Hase, 1. Mississippian geodes of the Keokuk, Iowa

region: Hayes, 1.

Kaolinite from Warsaw geodes, Keokuk re-gion, Iowa: Hayes, 2. Clay mineralogy of Mississippian strata in southeastern Iowa: Hayes, 3

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Linn

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow. 2.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2.

Skvor-Hartl area, southeast Linn County, Iowa; Field Trip May 12, 1962: Geological Society of Iowa, 1.

Ground water in Linn and Cerro Gordo counties, Iowa (Abstract): Hansen, R. E.,

Silurian bioherms of eastern Iowa: Hinman, I.

Chemical and metallurgical limestone in northern and northeastern states and Ontario: Landes, 1.

Chemical aspects of actinomycete metabolites as contributors of taste and odor: Morris, 2.

The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: Steiner,

Gas-storage capacity to climb 7%; a nationwide look at natural-gas underground storage capacity: Bizal, 2.

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Drift-filled valleys as ground-water sources in south-central Iowa (Abstract): Cagle, 1. Soil survey Lucas County, Iowa: U. S. Department of Agriculture, 3.

Madison

A morphometric analysis of selected Iowa drainage basins: Gordon, 1.

Mining and beneficiating methods and costs two crushed-limestone operations, Madison County, Iowa: Marshall, 2.

Free-swelling and grindability indexes of United States coals: Abernethy, 1.

Destructive distillation products of certain Iowa carbonaceous shales: Arnold, L. K.,

Amyelon in American coal-balls: Cridland, 1. Anachoropteris involuta and its attachment to a Tubicaulis type of stem from the Pennsylvanian of Iowa: Hall, 1.

Potonieisporites elegans (Wilson and Kosanke, 1944) Wilson and Venkatachala Comb. Nov.: Wilson, 1.

Free-swelling and grindability indexes of United States coals: Abernethy, 1.

Destructive distillation products of certain Iowa carbonaccous shales: Arnold, L. K., 1. Fossil plants from cave deposits near Pella, Marion County, Iowa: Huffman, I. Refonte du genre *Pugnoides* Weller, S. 1910

(Rhynchonelloidea): Sartenaer, 1.

Marshall

Crinoid and starfish fossils from LeGrand. Iowa: Boyt, 1.

The reorientation of calcite crystals in limestone: Curry, 1.

Vibrations from blasting at Iowa limestone quarries: Duvall, 1.

B. H. Beane and the LeGrand crinoid hunt-

ers: Gwynne, 1. Fossil starfish and crinoid slabs: Gwynne, 4. A new spiraculate blastoid, Pyramiblastus

from the Mississippian Hampton Formation of Iowa: Macurda, 2.

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological

Field Conference, 1.

Southwestern Iowa; Field Trip August 22-23, 1964: Geological Society of Iowa, 5.

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2

Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2. Natural Gas Pipeline Company gambles on submerged Missouri River single-line crossings: Reed, 1.

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

Pumping irrigation wells for drainage of Luton soils: Kriz, 1.

Hydraulic characteristics of aquifers of the Missouri River floodplain near Hornick, Iowa: Kriz, 2.

Montgomery

Southwestern Iowa; Field Trip August 22-23, 1964: Geological Society of Iowa, 5.

Free-swelling and grindability indexes of United States coals: Abernethy, 1.

Muscatine

Atlas of products pipelines of the United States - 1963: Anonymous, 6.

Conodont zonation of the early Upper Devonian in eastern Iowa: Klapper, 1.

The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: Steiner, 1.

Pocahontas

Corals of the Gilmore City Limestone (Mississippian) of Iowa: Carlson, K. J., 1.

Sand and gravel operations and costs, West Des Moines, Iowa: Marshall, 3. Floods at Des Moines, Iowa: Myers, 2.

Soil survey Polk County, Iowa: U. S. Department of Agriculture, 1.

Pottawattamie

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

Economic significance of a buried bedrock bench beneath the Missouri River flood-plain near Council Bluffs, Iowa: Miller, R. D., 1.

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Poweshiek

A post-Kansan peat at Grinnell, Iowa: a pre-

liminary report: Graham, 1. Water resources of the English River, Old Mans Creek, and Clear Creek basins in Iowa: Schwob, 2.

Scott

Chemical and metallurgical limestone in northern and northeastern states and Ontario: Landes, 1.

Soil survey Shelby County, Iowa: U. S. Department of Agriculture, 4.

Geohydrology of the aquifer supplying Ames, Iowa: Backsen, I.

Observations of bog and pollen stratigraphy

of the Des Moines glacial lobe: Walker,

Van Buren

Clay mineralogy of Mississippian strata in southeastern Iowa: Hayes, 3.

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Geology and general ground-water conditions in Van Buren County: Hershey, 4.

Treating troublesome waters: Boeke, 1 A morphometric analysis of selected Iowa

drainage basins: Gordon, 1.

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Washington

Discovery makes 10 barrels per day: Anony-

Geologic interpretation of magnetic map, Washington County, Iowa: Hase, 2. Iowa's first oil well may spur 3-state play:

Kornfeld, 1.

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Water resources of the English River, Old Mans Creek, and Clear Creek basins in Iowa: Schwob, 2.

Drift-filled valleys as ground-water sources in south-central Iowa (Abstract): Cagle, 1.

Wehster

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. L., 1.

Mining methods of the Fort Dodge Lime-stone Company, Inc., Fort Dodge, Iowa:

Marshall, 1

Underground gas storage in the northern plains, with particular reference to Northern Natural Gas Company: Martinson, 1.

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, L. A., I; Tri-State Geological Field Conference, 1.

Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Walker, 1 Reductive decomposition of gypsum

carbon monoxide: Wheelock, 1. Production of sulphur dioxide and lime from calcium sulphate: Wheelock, 2.

Winnebago

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1.

Peat producers in United States in 1960: Sheridan, 1.

Winneshiek

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

Background radioactivity in the Decorah

fault region: Lorenz, 1. Ordovician potassium bentonites of Iowa: Mossler, 1

Woodbury

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

Water resources in Sioux City and vicinity: Iowa Engineering Society, Northwest Chapter, 1.

Worth

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1.

Wright

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1. Peat producers in United States in 1960:

Sheridan, 1.

Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Walker, 1.

### ECONOMIC GEOLOGY, MINING, AND METALLURGY

Clay and bentonite

Electrokinetic properties of lime-treated bentonites: Ho, I.

Free-swelling and grindability indexes of United States coals: Abernethy, 1.

Coal seam in the Cedar Valley Formation

of Johnson County: Dow, 1.
Injury experience in coal mining: Machisak, 2, 4, 5, 6 and 9; Moyer, 1 and 2.
Mineral fuels: U. S. Bur. of Mines, 2, 5, 8, 11 and 14.

Thickness of bituminous coal seams mined in 1960: Young, 1.

Construction materials and aggregates

Geology of the Dubuque south quadrangle: Brown, 1

Lightweight aggregates: Expansion properties of clays, shales, and Precambrian rocks of Wisconsin: Cole, 1.

Bituminous mixes prepared with ungraded local aggregates: Csanyi, 1.

Geologic and engineering properties of Pleistocene materials in Iowa: Davidson, 1.

Aggregate source index: Faul, 1.

Lightweight aggregates: Expansion properties of clays, shales, and argillites of Minnesota: Grosh, 1.

Review of occurrence of the carbonate rocks

in Iowa: Hershey, 1. Highway construction materials from con-solidated rocks of south-western Iowa: Hershey, 2.

Relationship of pore-size distribution and other rock properties to serviceability of some carbonate aggregates: Hiltrop, 1.

Research on carbonate aggregate reactions in concrete: Lemish, 1 and 2.

Sand and gravel operations and costs, West Des Moines, Iowa: Marshall, 3. Geology of the Omaha-Council Bluffs area:

Miller, R. D., 2.

Lightweight aggregates: Expansion properties of selected Iowa shales, clays, and loess: Sweeney, 3.

Dubuque area

Geology of the Dubuque south quadrangle: Brown, 1.

Gas, underground storage

A nationwide look at natural-gas underground storage capacity: Bizal, I and 2. Underground gas storage in aquifers: Grimm,

Underground gas storage in the northern

plains: Martinson, 1. First major all-LPG pipeline: Thomas, R. E., 1.

Minerals Yearbook, Fuels: U. S. Bur. of Mines, 2, 5, 8, 11 and 14.

A subsurface geological study of the Redfield gas-storage area: Valentine, 1.

General

Geology in Iowa - a summary: Gwynne, 3. Minerals Yearbook, area reports: U. S. Bur. of Mines, 3, 6, 9, 12 and 15.

Gypsum

Reductive decomposition of gypsum by carbonate monoxide: Wheelock, 1.

Production of sulphur dioxide and lime from calcium sulphate: Wheelock, 2.

Selected annotated bibliography of gypsum and anhydrite in United States: Withington, 1.

Jefferson County

The geology of Jefferson County, Iowa: Drahovzal, 1.

Lightweight aggregates

Lightweight aggregates: Expansion properties of clays, shales, and Precambrian rocks of Wisconsin: Cole, 1.

Lightweight aggregates: Expansion properties of clays, shales, and argillites of Minnesota: Grosh, 1.

Lightweight aggregates: Expansion properties of selected Iowa shales, clays, and loess: Sweeney, 3.

Potential for a lime plant in north-central Iowa: Northern Natural Gas Company, 1.

Chemical and metallurgical limestone in northern and northeastern States: Landes,

Mining methods of the Fort Dodge Lime-stone Company, Inc., Fort Dodge, Iowa: Marshall, 1.

Mining and beneficiating methods and costs at two crushed limestone operations, Madison County: Marshall, 2.

Minerals and mineral industry

The mineral industry of Iowa: Gustavson, 1, 2 and 3; Sweeney, 1 and 2.

Injury experience in quarrying: Machisak, 1, 7, 10 and 12. Directory of major United States mining and

mineral processing operations: Metal Mining and Processing, Editor, 1; Min-ing World, Editor, 1, 2, 3 and 4.

Minerals Yearbook, metals and minerals (except fuels): U. S. Bur. of Mines, 1, 4, 7, 10 and 13.

Mining statistics

Report of the State Mine Inspector for biennial period ending December 31, 1959, 1961, 1963: Department of Mine Inspection, 1, 2 and 3.

Directory of major United States mining and mineral processing operations: Metal Mining and Processing, Editor, 1; Min-ing World, Editor, 1, 2, 3 and 4.

### Oil (see OIL AND GAS)

Peat

Peat producers in United States in 1960: Sheridan, 1.

Yearbook, fuels: U. S. Bur. of Minerals Mines, 2, 5, 8, 11 and 14.

Geology of the Dubuque south quadrangle: Brown, 1.

Pipelines

Big new LPG line in midwest planned: Anonymous, 2.

Mid-America line expanding: Anonymous, 3. Mid-America programs big expansion: An-

Atlas of products pipelines of the United States - 1963: Anonymous, 6. Pipeline notes: Retire old, install new Mis-

sissippi crossings: Anonymous, 8.

Two pipelines take plant output to market: Bozeman, 1.

Mid-America charts third big expansion:

O'Donnell, 1. Natural Gas Pipeline Company Missouri River crossings: Reed, 1.

irst major all-LPG pipeline: Thomas, R. E., I. First

Quarries

Vibrations from blasting at Iowa limestone quarries: Duvall, 1.

Injury experience in quarrying: Machisak, 1, 7, 10, and 12.

Destructive distillation products of certain Iowa carbonaceous shales: Arnold, L. K., 1.

Van Buren County

Geology and ground-water conditions in Van Buren County: Hershey, 4.

Zinc and lead

Geology of the Dubuque south quadrangle: Brown, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

### ENGINEERING GEOLOGY

Controlling erosion

Methods of controlling erosion on newly seeded highway backslopes in Iowa: Schmidt, 1.

General

Geologic and engineering properties of Pleistocene materials in Iowa: Davidson, 1.

Highway materials and aggregates

An engineering report on the soils, geology, terrain, and climate of Iowa: Anderson, D. A., 1.

Bituminous mixes prepared with ungraded local aggregates: Csanyi, 1.

Geologic and engineering properties of till and loess, southeastern Iowa: Hansen,

Compositional variations associated with carbonate aggregate-cement paste reactions: Harwood, 1.

Research on carbonate aggregate reactions

in concrete: Lemish, 1. Carbonate aggregate reactions: Recent studies and an approach to the problem: Lemish, 2.

Studies of carbonate aggregate reactions: Expansion behavior; environmental effects; concrete matrix investigations: Moore, 1.

Reactivity and expansion phenomena as related to physical properties of carbonate rocks: Vredenburgh, 1.

Evaluation of autoclave induced expansion of some Iowa carbonate rocks: Vredenburgh, 2.

Variations in performance of concrete with carbonate aggregates in Iowa: Welp, 1. Equilibria in cement paste-carbonate aggregate reactions: Werner, 1.

Depth studies of the Wisconsin loess in southwestern Iowa - particle size and inplace density: Davidson, 3.

Property variation in the Peorian (Wisconsin) loess of southwestern Iowa: Davidson, 4.

Further studies of loess in Iowa - thickness, clay content, and engineering classification: Hansen, J. A., 1.

Property variations in the Wisconsin loess of east-central Iowa: Lyon, 1. Further correlation of consistency limits of

of Iowa loess with clay content: Sheeler, 1.

Missouri River Valley

Missouri River studies: Alluvial morphology and Quaternary history: Dahl, 1.

Missouri River studies: Alluvial morph-ology and engineering soil classification: Glenn, 1 and 2.

Economic significance of a buried bedrock bench beneath the Missouri River flood-plain near Council Bluffs: Miller, R. D., I.

Pipelines

Natural Gas Pipeline Company gambles on single-line submerged Missouri River crossings: Reed, 1.

Redfield gas storage

Underground gas storage in aquifers: Grimm,

Soils

Methods for testing engineering soils: Davidson, 5.

Soil stabilization with chemicals: Davidson, 6.

Soil stabilization with cement: Davidson,

Soil stabilization with lime: Davidson, 8 Soil stabilization with lime fly ash: Davidson, 9.

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, I and 2

### GEOCHEMISTRY

Ground water

Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1.

Upper Mississippi Valley

Supergene alteration of zinc and lead de-posits in limestone: Takahashi, 1.

### GEOPHYSICS

Aeromagnetic surveys

Preliminary interpretation of an aeromagnetic survey in north-central Iowa: Henderson, 1 and 3.

Preliminary interpretation of an aeromagnetic survey in central and southwestern Iowa: Henderson, 2.

Blasting effects at quarries

Vibrations from blasting at Iowa limestone quarries: Duvall, 1.

Gravimeter bases and gravity control

The Woods Hole-University of Wisconsin international network of gravimeter bases: Woollard, 1.

Iowa gravity control and regional Bouguer anomaly map: Woollard, 2. Bouguer gravity anomaly map of the United States: Woollard, 3.

Lee County

The Vincennes magnetic anomaly, Lee County: Hase, 1.

Mid-continent gravity high analysis

Regional gravity analysis of the mid-continent gravity high (Abstract): Coons, 1.

Radioactive measurements

Background radioactivity in the Decorah fault region: Lorenz, I.

Seismic noise The spectrum of seismic noise: Frantii, I.

Seismological research

A note on the effect of ripple firing on the spectra of quarry shots: Willis, 1.

Washington County

Geologic interpretation of magnetic map, Washington County, Iowa: Hase, 2.

### GLACIAL GEOLOGY

Bog and pollen analysis

Observations of bog and pollen stratigraphy of the Des Moines lobe: Walker, I.

Clay and bentonite

Electrokinetic properties of lime-treated bentonites: Ho, I.

Drainage basins

Morphometric study of two drainage basins near Iowa City, Iowa: Milling, I. Morphometric analysis of Clear Creek and

Old Mans Creek, Iowa and Johnson Coun-

ties, Iowa: Milling, 2.
The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: Steiner,

Erosion effects on drift plain

Initial erosion effects on Cary drift plain, Central Iowa: Wallace, R. W., 2.

Frost action

Pleistocene frost action in and near northeastern Iowa (Abstract): Schafer, I.

Geologic and engineering properties of Pleistocene materials in Iowa: David-A morphometric analysis of selected Iowa

drainage basins: Gordon, 1. Men of Ancient Iowa: McKusick, 1.

Loess

A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Ne-

and reornan Formations in eastern Ne-braska and western Iowa: Castellano, 1. Dark-colored bands in the thick losss of western Iowa: Daniels, 2. Stratigraphy and mineralogy of the Wis-consinan losses of Illinois: Frye, 1. Further studies of loss in Iowa - thickness, clay content, and engineering classifica-

tion: Hansen, J. A., I.
Geologic and engineering properties of till and loess, southeastern Iowa: Hansen, J. A., 2.

The classification of the Wisconsin glacial stage of north-central United States: Leighton, 1

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Further correlation of consistency limits of Iowa loess with clay content: Sheeler, 1.

Sand and gravel

Sand and gravel operations and costs, West Des Moines, Iowa: Marshall, 3

Stone lines

Stone lines on Cary till: Wallace, R. W., 1.

Terraces

The terraces along the Cedar River from Cedar Rapids to Moscow, Iowa: Steiner, 1. Pleistocene geology of Clark County, north-eastern Missouri: Stone, 1.

Ferrous iron content and color of sediments: Daniels, 3

Geologic and engineering properties of till and loess, southeastern Iowa: Hansen, J. A., 2.

The classification of the Wisconsin glacial stage of north-central United States: Leigh-

ton, 1.

Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2. Properties and genesis of soils developed in very firm till in northeastern Iowa: Tyler, 1.

Stone lines on Cary till: Wallace, R. W., 1. Initial erosion effects on Cary drift plain, central Iowa: Wallace, R. W., 2.

#### HYDROLOGY

General

(Regulations governing flood control, conservation, development, and use of water resources of Iowa) Chapter 455A, Iowa Natural Resources Council, in Volume I, Code of Iowa 1962: Barlow, 1; Iowa Natural Resources Council, 1.

Eighth report of the Iowa Natural Resources Council for the biennial period July 1962 - June 20, 1964: Iowa Natural Re-

sources Council, 2.

sources Council, 2.
The role of ground water in the national water situation: McGuinness, 1.
Interpretation and current status of ground-water rights: Piper, 1.

The water problem in Iowa: Schaller, 1.

Ground water

Geohydrology of the aquifer supplying Ames, Iowa: Backsen, 1. Geology of the Dubuque south quadrangle:

Brown, 1 Drift-filled valleys as ground-water sources

in south-central Iowa (Abstract): Cagle, 1. Ground water in Linn and Cerro Gordo Counties, Iowa (Abstract): Hansen, R. E., 1. Map of bedrock topography of northwestern

Missouri: Heim, 1.

Geology and general ground-water conditions in Davis County, Iowa: Hershey, 3. Geology and general ground-water conditions in Van Buren County, Iowa: Hershey,

Ground water in Mississippian limestone of Iowa (Abstract): Horick,

An analysis of the Ralston Creek hydrologic record: Howe, 1.

Ground-water areas in Missouri: Knight, 1. Pumping irrigation wells for drainage of Luton soils: Kriz, 1.

Hydraulic characteristics of aquifers of the Missouri River floodplain near Hornick, Iowa: Kriz, 2.

Estimated use of water in United States,

1960: Mackichan, I.

The role of ground water in the national water situation: McGuinness, I.

The role of ground water in the national water situation: McGuinness, I.

Generalized map showing annual runoff and productive aquifers in the conterminous United States: McGuinness, 2

Water atlas of the United States, basic facts about the nation's water resources: Miller, D. W., I. Radiochemistry and removal characteristics of radium isotopes in Iowa well waters: Morris, 1. Acidized wells brought back to full produc-

tion: Olson, 1

Aquifers in melt-water channels along the southwest flank of the Des Moines lobe, Lyon County, Minnesota: Schneider, 1. Water resources of the English River, Old

Mans Creek, and Clear Creek basins in

Iowa: Schwob, 2. Ground-water levels in the United States 1957-61, north-central States: Steele, 1. Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Municipal water systems, supplies, and treatment

Geohydrology of the aquifer supplying Ames, Iowa: Backsen, 1.

Iowa State: Pilot studies of diatomite filtration: Baumann, 1.

Treating troublesome waters - the American city (Ottumwa): Boeke, 1. Water resources in Sioux City and vicinity:

Iowa Engineering Society,

Chapter, I.
Census of public water supplies for Iowa communities 1961 and 1964: Iowa State Department of Health, I and 2.

Iowa public water supply data: Iowa State Department of Health, 3.

Acidized wells brought back to full production (Shenandoah): Olson, 1.

Municipal water facilities, communities of 25,000 population and over, as of January 1, 1964: Department of Health, Educa-tion, and Welfare - Public Health Service,

1963 inventory municipal water facilities, region 6: Department of Health, Education, and Welfare - Public Health Service,

Quality of water

Chemical quality of public water supplies of the United States and Puerto Rico, 1962: Durfor, 1. Iowa public water supply data: Iowa State

Department of Health, 3.

Chemical aspects of actinomycete metabolites as contributors of taste and odor: Morris, 2.

Stream composition of the conterminous United States: Rainwater, 1. Quality of surface waters of the United States 1957, parts 5 and 6, Hudson Bay and Upper Movingtons Birms, Landon

Mississippi River basins, and Missouri River basin: U. S. Geol. Survey, 9. Quality of surface waters of the United States 1958, parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey, 10.

Quality of surface waters of the United States 1962, parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey, 12.

Surface water

The water resource base of Iowa: Hidore, 1. An analysis of the Ralston Creek hydrologic record; Howe, 1.

New problems in hydrology (Big Sioux River at Sioux City): Kazmann, 1. Estimated use of water in United States,

1960: Mackichan, 1. Generalized map showing annual runoff and productive aquifers in the contermin-ous United States: McGuinness, 2.

Water atlas of the United States, basic facts about the nation's water resources: Miller, D. W., 1.

Surface-water resources of Iowa, October 1, 1955 to September 30, 1960: Myers, 1. Floods at Des Moines, Iowa: Myers, 2.

Water vield prediction in southern Iowa based on watershed characteristics: Nixon,

Steam composition of the conterminous United States: Rainwater, 1.

Cedar River basin floods: Schwob, 1. Water resources of the English River, Old Mans Creek, and Clear Creek basins in Iowa: Schwob, 2.

Harness for America's Missouri River:

Shuler, 1.

Snuier, 1.
Atlas of river basins of the United States:
U. S. Department of Agriculture, 6.
Surface water supply of the United States
1958, part 5, Hudson Bay and Upper Mississippi River basins: U. S. Geol. Survey, 1.

Surface water supply of the United States 1958, part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey, 2.

Surface water supply of the United States 1958, part 6-B, Missouri River basin below

1958, part 6-B, Missouri River basin below Sioux City, Iowa: U. S. Geol. Survey, 3. Surface water supply of the United States 1959, part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey, 4. Surface water supply of the United States 1959, part 6-B, Missouri River basin below

Sioux City, Iowa: U. S. Geol. Survey, 5. Surface water supply of the United States 1959, part 5, Hudson Bay and Upper Mississippi River Basins: U. S. Geol. Survey,

Surface water supply of the United States 1960, part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol. Survey, Surface water supply of the United States

1960, part 6-B, Missouri River basin below Sioux City, Iowa: U. S. Geol. Survey, 8. Quality of surface waters of the United States

1957, parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey, 9. Quality of surface waters of the United States

1958, parts 5 and 6, Hudson Bay and Upper 1998, parts 5 and 6, Fudgon Bay and Opper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey, 10. Summary of floods in the United States dur-ing 1958: U. S. Geol. Survey, 11. Quality of surface waters of the United States

1962, parts 5 and 6, Hudson Bay and Upper Mississippi River basins, and Missouri River basin: U. S. Geol. Survey, 12.

Compilation of records of surface waters of Computation of records of surface waters of the United States, October 1950 to September 1960, part 5, Hudson Bay and Upper Mississippi River basins: U. S. Geol. Survey, 13.

Compilation of records of surface waters of the United Section 1960 to Section

the United States, October 1960 to September 1960, part 6-A, Missouri River basin above Sioux City, Iowa: U. S. Geol.

Compilation of records of surface waters of the United States, October 1950 to September 1960, part 6-B, Missouri River basin below Sioux City, Iowa: U. S. Geol.

Survey, 15. Summary of floods in the United States during 1956: U. S. Geol. Survey, 16.

#### MINERALOGY

Bentonites

properties of lime-treated Electrokinetic bentonites: Ho, 1

Ordovician potassium bentonites of Iowa: Mossler, I.

The reorientation of calcite crystals in limestone: Curry, 1

Clay polymerization in carbonate rocks, a silicification reaction defined: Bisque, 1.

A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Castellano, 1.

and western lowa: Castellano, 1. Studies of clay fractions of southwestern Iowa loess: Davidson, 2. Exchangeable potassium and clay minerals in selected lowa soil profiles: Hanway, 1. Mississippian geodes of the Keokuk, Iowa region (Abstract): Hayes, 1. Kaolinite from Warsaw geodes, Keokuk

region, Iowa: Hayes, 2.

Clay mineralogy of Mississippian strata in southeastern Iowa: Hayes,

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4. Clay-mineral alteration in the Upper Mis-

sissippi Valley zinc-lead district: Heyl, 1.

Qualitative X-ray emission analysis studies of enrichment of common elements in wallrock alteration in the Upper Missis-sippi Valley zinc-lead district: Hosterman, 1.

Clay mineralogy of a gumbotil: Kelley, 1.

Cretaceous deposits

Cretaceous deposits and the Illinoian glacial boundary in western Illinois: Frye, 2.

Geologic and engineering properties of Pleistocene materials in Iowa: Davidson,

Minerals of Pint's quarry: Menzel, 1.

Geodes

Varieties of Iowa geodes: Borschel, I Our fascinating enigmatic geodes: Fleener,

Mississippian geodes of the Keokuk, Iowa region: Hayes, 1. Kaolinite from Warsaw geodes, Keokuk re-

gion, Iowa: Hayes, 2.

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Keokuk geode area of Iowa and Missouri: Kane, 1.

Some minerals found in geodes: Lamb, 1. Inclusive minerals of the Keokuk geodes: Tripp, 1

Loess

A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Castellano, 1.

Studies of clay fractions of southwestern Iowa loess: Davidson, 2.

Stratigraphy and mineralogy of the Wisconsinan loesses of Illinois: Frye, 1.

Manganese

Distribution of sodium hydrosulfite extractable manganese in some Iowa soil profiles: Daniels, 4.

A study in clay mineralogy and the relation-ship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Castellano, I.

Methods for testing engineering soils: David-

Soil stabilization with chemicals: Davidson,

Soil stabilization with cement: Davidson, 7. Soil stabilization with lime: Davidson, 8.

Soil stabilization with lime fly ash: Davidson, 9.

Clay mineralogy of a gumbotil: Kelley, 1.

#### Volcanie ash

Ordovician potassium bentonites of Iowa: Mossler, 1.

# OIL AND GAS

#### Forest City basin

New thinking may be key to unlocking Missouri prospects: Anderson, K. H., 1.

#### Genera

Discovery makes 10 barrels per day: Anonymous, 5.

Iowa in midst of biggest drilling play in its history: Anonymous, 7.

#### Keota dome area

Iowa's first oil well may spur 3 State play: Kornfeld, 1.

#### Laws and regulations

Chapter 84, natural gas and oil, S. F. 430, in Acts and joint resolutions passed at the regular session of the sixtieth general assembly of the State of Iowa: Barlow, 2.

Oil and gas exploration and development problems: Davis, 1.

Eighth report of the Iowa Natural Resources Council for the biennial period July 1, 1962 - June 20, 1964: Iowa Natural Resources Council, 2.

#### Lincoln fold

New thinking may be key to unlocking Missouri prospects: Anderson, K. H., 1.

The Lincoln fold of northeastern Missouri: Koenig, 1.

## Oil shales

Destructive distillation products of certain Iowa carbonaceous shales: Arnold, L. K., 1.

# **Pipelines**

Big new LPG line in midwest planned: Anonymous, 2.

Mid-America line expanding: Anonymous, 3. Mid-America programs big expansion: Anonymous, 4.

Atlas of products pipelines of the United States - 1963: Anonymous, 6.

Pipelining notes: Retire old, install new Mississippi crossings: Anonymous, 8. Two pipelines take plant output to market:

Bozeman, 1. Mid-America charts third big expansion:

Mid-America charts third big expansion O'Donnell, 1.

Natural Gas Pipeline Company gambles on single-line submerged Missouri River crossings: Reed, 1.

First major all-LPG pipeline will be operating by December: Thomas, R. E., 1.

### Underground storage of gas

How Northern Natural operates aquifer gas storage: Anonymous, 1.

Gas-storage capacity spurts: Bizal, 1. Gas-storage capacity to climb 7%; a nation-

Gas-storage capacity to climb 7%; a nationwide look at natural-gas underground storage capacity: Bizal, 2.

Underground gas storage in aquifers: Grimm, 1.

Underground gas storage in the northern plains, with particular reference to Northern Natural Gas Company: Martinson, 1.

First major all-LPG pipeline will be operating by December: Thomas, R. E., 1. Minerals Yearbook, fuels: U. S. Bur. of Mines, 2, 5, 8, 11, and 14.

A subsurface geological study of the Redfield gas-storage area: Valentine, 1.

#### PALEOBOTANY

#### General

Amuelon in American coal-balls: Cridland, 1. Anachoropteris involuta and its attachment to a Tubicaulis type of stem from the Pennsylvanian of Iowa: Hall, 1.

The anatomy and morphology of certain Cordaites leaves: Harms, 1.

Fossil plants from cave deposits near Pella, Marion County, Iowa: Huffman, 1.

The morphology and anatomy of Callipteridium sullivanti (Iowa-Kansas): Leisman,

A calamitean shoot apex from the Pennsylvanian of Iowa: Melchior, 1.

#### PALEOECOLOGY

#### Altamont Formation

The environment of cyclic sedimentation and the paleoecology of the Altamont Formation (Desmoinesian) of Iowa, Missouri, Kansas, and northeastern Oklahoma (Abstract): Schenk, 1.

#### PALEONTOLOGY

#### Ammonoids

Observations on the ammonoid succession of the North American Devonian: House, I.

# Annelida

Scolecondonts from the Sheffield Shale, Upper Devonian of Iowa: Eller, 1.

#### Bioherms and biostromes

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2. Silurian bioherms of eastern Iowa: Hinman,

#### Blastoidea

Morphology of the blastoid Globoblastus norwoodi: Beaver, 1.

Dentiblastus - a new blastoid genus from the Burlington Limestone (Mississippian): Macurda, I.

A new spiraculate blastoid, *Pyramiblastus* from the Mississippian Hampton Formation of Iowa: Macurda, 2.

# Brachiopoda

The epifauna of a Devonian spiriferid: Ager, 1.

The internal anatomy, shell growth and asymmetry of a Devonian spiriferid: Ager, 2.

Callipentamerus, a new genus of brachiopod from the Silurian of Iowa: Boucot, 1.

Refonte du genre *Pugnoides* Weller, S. 1910 (Rhynchonelloidea): Sartenaer, 1.

#### Bryozoa

Spechts Ferry (Middle Ordovician) bryozoan fauna from Illinois, Wisconsin, and Iowa: Perry, 1.

#### Conodonts

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

A Mississippian conodont fauna from Grundy County, Iowa: Binder, 1. Six charts showing biostratigraphic zones, and correlations based on conodonts from the Devonian and Mississippian rocks of the Upper Mississippi Valley: Collinson, 2.

Significance of lower Burlington conodont assemblages in southeastern Iowa: Frerichs, 1.

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

Biostratigraphic relations of the basal St. Peter Sandstone in northeast Iowa and southwest Wisconsin: Hart, 1.

Conodont zonation of the early Upper Devonian in eastern Iowa: Klapper, 1. Conodonts from the Pella Formation (Mis-

sissippian) south-central Iowa: Rexroad, 1. Conodont faunas from the Louisiana and Me-Craney Formations of Illinois, Iowa, and Missouri: Scott, 1.

Corals

Corals of the Gilmore City Limestone (Mississippian) of Iowa: Carlson, K. J., 1. Devonian corals from the Cedar Valley Limestone of Iowa: Pitrat, 1.

Crinoidea

Crinoid and starfish fossils from LeGrand, Iowa: Boyt, 1.

B. H. Beane and the LeGrand crinoid hunters: Gwynne, 1.

Fossil starfish and crinoid slabs: Gwynne, 4.

Crinoids and starfish added to Iowa Collection: Musgrove, 1.

Devonian foraminifera: Part 1 - The Louisiana Limestone of Missouri and Illinois: Conkin, 1.

Fossil-cleaning technique

Amazing new technique for cleaning fossils: Boyt, 2.

General

Geology in Iowa - a summary: Gwynne, 3. Megaspores and other fossils in the Dakota Formation (Cenomanian) of Iowa (U.S.A.) (Abstract in French): Hall, 2.

The Lime Creek Formation in the area of Garner, Iowa: Koch, 2.

Fossil hunting in Iowa: Lampe, 1. Pennsylvanian fossils of eastern Nebraska and western Iowa: White, 1.

Early Silurian graptolites from the Edgewood Formation of Iowa: Ross, 1.

Micropaleontology

Early Mississippian (Lower Carboniferous-Tournaisian) micropaleontology in the United States: Gutschick, 1. Microfossils in Wisconsin loess and till

from western Illinois and eastern Iowa: Jones, 1.

Microfossils of problematical affinity from the Maquoketa Formation of eastern Iowa and western Illinois: Rhoads, 1.

Megaspores and other fossils in the Dakota Formation (Cenomanian) of Iowa (U.S.A.) (Abstract in French): Hall, 2.

Potonieisporites elegans (Wilson and Ko-sanke, 1944) Wilson and Venkatachala Comb. Nov.: Wilson, 1.

Stelleroidea

Crinoid and starfish fossils from LeGrand, Iowa: Boyt, 1.

Fossil starfish and crinoid slabs: Gwynne, 4. Crinoids and starfish added to Iowa collection: Musgrove: 1.

Vertebrates

Problems of paleontological preservation in Iowa: Frankforter, 1 A late Wisconsin giant beaver in northern

Iowa: Frankforter 2 Men of Ancient Iowa: McKusick, 1.

#### PALYNOLOGY

Megaspores

Megaspores and other fossils in the Dakota Formation (Cenomanian) of Iowa (U.S.A.) (Abstract in French): Hall, 2.

### PETROLOGY AND PETROGRAPHY

Petrofabries of carbonate rocks determined by X-ray diffraction: Curry, 2.

X-ray methods applied to quantitative study of carbonate rocks: Diebold, 1.

Compositional variations associated with carbonate aggregate-cement paste reactions: Harwood, 1.

Petrology of the Hampton Formation at

Iowa Falls, Iowa: Mason, 1.
Petrology of the Hampton Formation at Eagle City, Iowa: Vander Ley, 1.

Reactivity and expansion phenomena as related to physical properties of carbonate rocks: Vredenburgh, 1.

Evaluation of autoclave induced expansion of some Iowa carbonate rocks: Vredenburgh, 2.

Relationships of pore size to texture in some carbonate rocks: Wallace, C. M., 1.

Concretions

Petrography of Quaternary concretions from western Iowa: Lohnes, 1. Geodes and concretions from the Mississip-

pian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Fine sands

Fine sands in eastern Iowa - a study of their geological and engineering properties: Wickstrom, 1. Properties of five Iowa fine sands: Wil-

liams, 1.

General

Geologic and engineering properties of Pleistocene materials in Iowa: Davidson, 1.

Geodes

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Limestone diagenesis

Stratigraphy of the Osage Series in south-

eastern Iowa: Harris, 1.

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological Field Conference, 1.

Dark-colored bands in the thick loess of western Iowa: Daniels, 2.

Depth studies of the Wisconsin loess in southwestern Iowa - particle size and in-place density: Davidson, 3.

Property variation in the Peorian (Wisconsin) loess of southwestern Iowa: Davidson, 4.

Comparison of petrographic and engineering properties of loess in southwest, eastcentral, and northeast Iowa: Handy, 2.

Further studies of loess in Iowa - thickness, clay content, and engineering classifica-

tion: Hansen, J. A., I.
Geologic and engineering properties of till
and loess, southeastern Iowa: Hansen, J. A., 2.

Property variations in the Wisconsin loess of east-central Iowa: Lyon, 1.

# PHYSIOGRAPHY AND GEOMORPHOLOGY

Alluvial deposits

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn,

Preliminary investigations of the Little Sioux River valley: Pedersen, 1

Alluvial morphology of the Little Sioux River valley in western Iowa: Pedersen, 2.

Caves

The Collembola of Hunter's cave: Christiansen, 1.

Collembola of Hunter's cave - discussion: Hedges, 1.

The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Drainage and river valleys

Missouri River studies: Alluvial morphology and Quaternary history (Abstract): Dahl, Entrenchment of the Willow drainage ditch,

Harrison County, Iowa: Daniels, 1. Stratigraphy and mineralogy of the Wisconsinan loesses of Illinois: Frye, 1.

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

A morphometric analysis of selected Iowa drainage basins: Gordon, 1.

Cruising down the rivers: Handy, 1 The water resource base of Iowa (Abstract):

Hidore, 1. Alluvial history of the Nishnabotna Valley,

southwestern Iowa: Knochenmus, 1. Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Morphometric study of two drainage basins near Iowa City, Iowa: Milling, 1.

Morphometric analysis of Clear Creek and Old Mans Creek, Iowa and Johnson Counties, Iowa: Milling, 2.

Preliminary investigation of the Little Sioux

River valley: Pedersen, 1.

Alluvial morphology of the Little Sioux
River valley in western Iowa: Pedersen, 2

Cedar River basin floods: Schwob, 1.
The terraces along the Cedar River from
Cedar Rapids to Moscow, Iowa: Steiner, 1.

Pleistocene geology of Clark County, northeastern Missouri (Abstract): Stone, 1.

General

An engineering report on the soils, geology, terrain, and climate of Iowa: Anderson, D. A., 1.

Estimate of slope classes by counties in Iowa: Arnold, R. W., 1.
Dark-colored bands in the thick loess of

western Iowa: Daniels, 2.

Agricultural productivity and physical resource base of Iowa: Salisbury, 1.
Atlas of river basins of the United States:

U. S. Department of Agriculture, 6.

Discovery of a calcareous fen complex in northwest Iowa: Holtz, 1.

Water yield prediction in southern Iowa based on watershed characteristics: Nixon, 1.

Soils of Indian mounds in northeastern Iowa as benchmarks for studies of soil genesis: Parsons, 1.

Elements of the soil landscape: Ruhe, 1 Pleistocene frost action in and near north-eastern Iowa (Abstract): Schafer, 1.

Extent and distribution of soils in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Slusher, 1.

Stone lines in Cary till: Wallace, R. W., 1. Initial erosion effects on Cary drift plain, central Iowa: Wallace, R. W., 2.

Soil erosion

Relative erodibility of three loess-derived soils in southwestern Iowa: Schmidt, 2.

### SEDIMENTOLOGY

Alluvial and terrace deposits

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn,

Preliminary investigation of the Little Sioux River valley: Pedersen,

Alluvial morphology of the Little Sioux River valley in western Iowa: Pedersen, 2.

Altamont Formation

The environment of cyclic sedimentation and the paleoecology of the Altamont Formation (Desmoinesian) of Iowa, Missouri, Kansas, and northeastern Oklahoma (Abstract): Schenk, 1.

Color of sediments

Ferrous iron content and color of sediments: Daniels, 3.

General

Entrenchment of the Willow drainage ditch, Harrison County, Iowa: Daniels, 1.

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4.

Osage Series

Stratigraphy of the Osage Series in southeastern Iowa: Harris, 1.

Sediment content of rivers

Stream composition of the conterminous United States: Rainwater, 1.

#### SOILS

Alluvial

Missouri River studies: Alluvial morphology and engineering soil classification: Glenn, 1 and 2.

Genesis and classification considerations of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Clarion-Nicollet-Webster soil association

Extent and distribution of soils in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Slusher, 1. Clay minerals in

Exchangeable potassium and clay minerals in selected Iowa soil profiles: Hanway, 1. Clay mineralogy of a gumbotil: Kelley, 1.

Methods of controlling erosion on newlyseeded highway backslopes in Iowa: Schmidt, 1

Relative erodibility of three loess-derived soils in southwestern Iowa: Schmidt 2.

An engineering report on the soils, geology, terrain, and climate of Iowa: Anderson,

Estimate of slope classes by counties in Iowa: Arnold, R. W., 1.

Geologic and engineering properties of Pleistocene materials in Iowa: Davidson, 1. Agricultural productivity and physical resource base of Iowa: Salisbury, 1.

Atlas of river basins of the United States: U. S. Department of Agriculture, 6.

Highway engineering

An engineering report on the soils, geology, terrain, and climate of Iowa: Anderson, Methods for testing engineering soils: David-

son, 5.

Soil stabilization with chemicals: David-

son, 6.

Soil stabilization with cement: Davidson, 7. Soil stabilization with lime: Davidson, Soil stabilization with lime fly ash: Davidson, 9.

# Iron in

Ferrous iron content and color of sediments: Daniels, 3.

Dark-colored bands in the thick loess of western Iowa: Daniels, 2.

Further correlation of consistency limits of Iowa loess with clay content: Sheeler, 1.

Manganese in

Distribution of sodium hydrosulfite extractable manganese in some Iowa soil profiles: Daniels, 4.
Distribution of manganese in a bio-topo

sequence of southeastern Iowa soils: Runge, 1.

Potassium in

Exchangeable potassium and clay minerals in selected Iowa soil profiles: Hanway, 1.

Prairie

Characteristics of the Floyd and some related soils in Floyd and Bremer Counties, Iowa: Phillips, 1.

Genesis and classification considerations of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Regional

Missouri River studies: Alluvial morphology and Quaternary history: Dahl, 1. Missouri River studies: Alluvial morphology

and engineering soil classification: Glenn, 1 and 2.

Pumping irrigation wells for drainage of Luton soils: Kriz, 1.

Hydraulic characteristics of aquifers of the Missouri River flood-plain near Hornick, Iowa: Kriz, 2.

Effect of vegetation on soils in the forestprairie region: McComb, 1.

Water yield prediction in southern Iowa based on watershed characteristics: Nixon, 1.

Soils of Indian mounds in northeastern Iowa as benchmarks for studies of soil genesis: Parsons, 1. Characteristics of the Floyd and some re-

lated soils in Floyd and Bremer Counties, Iowa: Phillips, 1.

Elements of the soil landscape: Ruhe, I. Distribution of manganese in a bio-topo sequence of southeastern Iowa soils: Runge, 1.

Extent and distribution of soils in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Slusher, 1. Properties and genesis of soils developed in very firm till in northeastern Iowa:

Tyler, 1.

Soil survey Polk County, Iowa: U. S. Department of Agriculture, 1.

Soil survey Jefferson County, Iowa: U. S. Department of Agriculture, 2.

Soil survey Lucas County, Iowa: U. S. Department of Agriculture, 3.

Soil survey Shelby County, Iowa: U. S. Department of Agriculture, 4.

Soil survey Humboldt County, Iowa: U. S. Department of Agriculture, 5.

#### STRATIGRAPHY

Alexandrian Series

Unusual exposure of Silurian-Devonian unconformity in Loomis quarry near Denver, Iowa: Dorheim, 1.

Altamont Formation

The environment of cyclic sedimentation and the paleoecology of the Altamont Formation (Desmoinesian) of Iowa, Missouri, Kansas, and northeastern Oklahoma (Abstract): Schenk, 1.

Amana beds

Conodont zonation of the early Upper Devonian in eastern Iowa: Klapper, 1.

Anamosa Dolomite

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2 Silurian bioherms of eastern Iowa:

Hinman, 1. Aplington Formation

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

Bertram Dolomite

The structure and stratigraphy of the Skvor-Hartl Area, southeast Linn County, Iowa: Dow, 2.

Bignell Loess

Economic significance of a buried bedrock bench beneath the Missouri River flood-plain near Council Bluffs, Iowa: Miller, R. D., 1.

Boice Shale

Lithostratigraphy and correlation of the Mississippian System in Nebraska: Carlson, M. P., 1.

Brainard Member

Geology of the Dubuque south quadrangle: Brown, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Buchanan deposits

A post-Kansan peat at Grinnell, Iowa: a pre-liminary report: Graham, 1.

Burlington Formation

Morphology of the blastoid Globoblastus norwoodi: Beaver, The geology of Jefferson County, Iowa: Drahovzal, 1.

Significance of lower Burlington conodont assemblages in southeastern Iowa: Frerichs, I.

Stratigraphy of the Osage Series in southeastern Iowa: Harris, 1. Dentiblastus - A new Blastoid genus from

the Burlington Limestone (Mississippian): Macurda, I.
The middle Mississippian Series (Osagean

and Meramecian) of northeastern Missouri: Spreng, 1.

Cambrian System

How Northern Natural operates aquifer gas

storage: Anonymous, 1. The geology of Jefferson County, Iowa: Drahovzal, 1. Ground water in Linn and Cerro Gordo

Counties, Iowa, (Abstract): Hansen, R. E., 1.

Background radioactivity in the Decorah

fault region: Lorenz, I.
A study of the St. Lawrence Formation in the Upper Mississippi Valley: McGan-

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Carimona Member

Ordovician potassium bentonites of Iowa: Mossler, 1.

Cary Drift

Stone lines on Cary till: Wallace, R. W., 1.

Cedar Fork Member

Stratigraphy of the Osage Series in south-eastern Iowa: Harris, 1.

Cedar Valley Formation

The epifauna of a Devonian spiriferid: Ager, 1.

The internal anatomy, shell growth and asymmetry of a Devonian spiriferid: Ager, 2. Unusual exposure of Silurian-Devonian un-

conformity in Loomis quarry near Denver, Iowa: Dorheim, 1. Some notes on the occurrence of a coal seam

in the Cedar Valley Formation of Johnson County, Iowa: Dow, 1. The structure and stratigraphy of the Skvor-

Hartl area, southeast Linn County, Iowa: Dow, 2

The geology of Jefferson County, Iowa: Drahovzal, 1 Bioherms and biostromes in the Silurian-

Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2. Skvor-Hartl area, southeast Linn County, Iowa; Field Trip May 12, 1962: Geological

Society of Iowa, 1.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1. Lithostratigraphy of the Cedar Valley Forma-

tion in Minnesota and Iowa: Kohls, I. Devonian corals from the Cedar Valley Limestone of Iowa: Pitrat, I.

Cerro Gordo Member

Observations on the ammonoid succession of the North American Devonian: House, 1 The Lime Creek Formation in the area of Garner, Iowa: Koch, 2.

Cherokee Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Chouteau Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Coggon Member

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

Coralville Member

The structure and stratigraphy of the Skyor-Hartl area, southeast Linn County, Iowa: Dow. 2.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2.

Cretaceous System

Cretaceous deposits and the Illinoian gla-cial boundary in western Illinois: Frye, 2. Megaspores and other fossils in the Dakota Formation (Cenomanian) of Iowa (U.S.A.) (Abstract in French): Hall, 2.

Highway construction materials from the consolidated rocks of southwestern Iowa:

Hershey, 2. Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Crete Formation

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2

Dakota Formation

Megaspores and other fossils in the Dakota formation (Cenomanian) of Iowa (U.S.A.) (Abstract in French): Hall, 2.

David City Formation

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Decorah Formation

Geology of the Dubuque south quadrangle: Brown, 1.

Lightweight aggregates: Expansion properties of clays, shales, and Precambrian rocks of Wisconsin: Cole, 1.

The geology of Jefferson County, Iowa: Dra-

hovzal, I. Lightweight aggregates: Expansion properties of clays, shales, and argillites of Minnesota: Grosh, 1.

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville For-

mation: Guldenzopf, 1.

Qualitative X-ray emission analysis studies of enrichment of common elements in wallrock alteration in the Upper Mississippi Valley zinc-lead district: Hosterman, 1.

Ordovician potassium bentonites of Iowa: Mossler.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1. Geology of the Dubuque north quadrangle: Whitlow, 3

Des Moines Lobe

Aquifers in melt-water channels along the southwest flank of the Des Moines lobe, Lyon County, Minnesota: Schneider, I. Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Walker, I.

Des Moines Series

Amyelon in American coal-balls: Cridland,

The geology of Jefferson County Iowa: Dra-

Anachoropteris involuta and its attachment to a Tubicaulis type of stem from the Pen-nsylvanian of Iowa: Hall, 1.

Highway construction materials from the consolidated rocks of southwestern Iowa:

Hershey, 2. Fossil plants from cave deposits near Pella,

Marion County, Iowa: Huffman, 1. The morphology and anatomy of Callipteri-

dium sullivanti (Iowa-Kansas): Leisman,

A calamitean shoot apex from the Pennsylvanian of Iowa: Melchior, 1.

The environment of cyclic sedimentation

and the paleoecology of the Altamont Formation (Desmoinesian) of Iowa, Missouri, Kansas and northeastern Oklahoma: Schenk, 1.

Devonian System

The epifauna of a Devonian spirferid: Ager,

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I.,

The Kinderhook Series in the Mississippi

Valley: Collinson, 1. Six charts showing biostratigraphic zones, and correlations based on conodonts from the Devonian and Mississippian rocks of the Upper Mississippi Valley: Collinson,

Devonian foraminifera: Part 1 - The Louisiana Limestone of Missouri and Illinois: Conkin, 1.

Unusual exposure of Silurian-Devonian unconformity in Loomis quarry near Den-

ver, Iowa: Ďorheim, 1. The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa:

The geology of Jefferson County, Iowa: Dra-

hovzal, 1. Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2. Skvor-Hartl area, southeast Linn County,

Iowa; Field Trip May 12, 1962: Geological Society of Iowa, 1.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1.

Observations on the ammonoid succession of the North American Devonian: House, 1.

Conodont zonation of the early Upper Devonian in eastern Iowa: Klapper, 1.

The Lime Creek Formation in the area of Garner, Iowa: Koch, 2.

Lithostratigraphy of the Cedar Valley Formation in Minnesota and Iowa: Kohls, 1. Devonian corals from the Cedar Valley Lime-

stone of Iowa: Pitrat, 1.
Conodont faunas from the Louisiana and McCraney Formations of Illinois, Iowa, and Missouri: Scott, 1.

Dolbee Creek Member

Stratigraphy of the Osage Series in southeastern Iowa: Harris, 1.

Douglas Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Dresbach Group

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Dubuque Member

Ordovician potassium bentonites of Iowa: Mossler, 1.

Eagle City

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, northcentral Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological Field Conference, 1.

Edgewood Dolomite

Geology of the Dubuque south quadrangle: Brown, 1.

Early Silurian graptolites from the Edgewood Formation of Iowa: Ross, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

English River

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

The geology of Jefferson County, Iowa: Dra-hovzal, 1.

Observations on the ammonoid succession of the North American Devonian: House,

Franconia Sandstone

The geology of Jefferson County, Iowa: Drahovzal, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Fullerton Formation

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Galena Formation

Geology of the Dubuque south quadrangle: Brown, 1.

The Collembola of Hunter's cave: Christian-

Collembola of Hunter's cave - discussion: Hedges, 1.

The geology of Jefferson County Iowa: Dra-hovzal, I.

Ordovician potassium bentonites of Iowa: Mossler, 1

Qualitative X-ray emission analysis studies of enrichment of common elements in wallrock alteration in the Upper Mississippi Valley zinc-lead district: Hosterman,

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.
Geology of the Dubuque north quadrangle:

Whitlow, 3.

#### General

An engineering report on the soils, geology, terrain, and climate of Iowa: Anderson, D. A.,

New thinking may be key to unlocking Missouri prospects: Anderson, K. H., Underground gas storage in aquifers: Grimm,

Geology in Iowa - a summary: Gwynne, 3. Preliminary interpretation of an aeromagnetic survey in north-central Iowa: Hen-

derson, 1. Preliminary interpretation of an aeromagnetic survey in central and southwestern Iowa: Henderson, 2.

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

The stratigraphic succession in Missouri: Howe, 1.

The Lincoln fold of northeastern Missouri: Koenig, 1.

Fossil hunting in Iowa: Lampe, Lithofacies maps, an atlas of the United States and southern Canada: Sloss, 1.

Lightweight aggregates: Expansion properties of selected Iowa shales, clays, and loess: Sweeney, 3.

A subsurface geological study of the Redfield gas-storage area: Valentine,

Geology of the Dubuque north quadrangle: Whitlow, 3.

Gilmore City Formation

Corals of the Gilmore City Limestone (Mis-

sissippian) of Iowa: Carlson, K. J., I. Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological Field Conference, 1. Stratigraphic studies of the Gilmore City

Formation at Rutland, Iowa: Wagner, 1.

Glenwood Shale Member

Geology of the Dubuque south quadrangle: Brown, 1. Geology of the Dubuque north quadrangle:

Whitlow, 3.

Gower Formation

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1;

Tri-State Geological Field Conference, 2. Silurian bioherms of eastern Iowa: Hinman, 1.

Grand Island Formation

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Grassy Creek Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Guttenberg Limestone Member

Geology of the Dubuque south quadrangle: Brown, 1.

Ordovician potassium bentonites of Iowa: Mossler, 1

Geology of the Dubuque north quadrangle: Whitlow, 3

Haight Creek Member

Stratigraphy of the Osage Series in south-eastern Iowa: Harris, 1.

Hampton Formation

The reorientation of calcite crystals in limestone: Curry, I. The geology of Jefferson County, Iowa:

Drahovzal, 1. A new spiraculate blastoid, Pyramiblastus

from the Mississippian Hampton Formation of Iowa: Macurda, 2.

Mining methods of the Ford Dodge Limestone Company, Inc., Fort Dodge, Iowa: Marshall, 1

Petrology of the Hampton Formation at Iowa Falls, Iowa: Mason, 1. Petrology of the Hampton Formation at

Eagle City, Iowa: Vander Ley, 1.

Hannibal Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Hopkinton Formation

Callipentamerus, a new genus of brachiopod from the Silurian of Iowa: Boucot, 1. Geology of the Dubuque south quadrangle:

Brown, 1. The structure and stratigraphy of the Skvor-

Hartl area, southeast Linn County, Iowa: Dow, 2.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Independence Shale

Conodont zonation of the early Upper Devonian in eastern Iowa: Klapper, 1.

Ion Member

Geology of the Dubuque south quadrangle: Brown, 1. Ordovician potassium bentonites of Iowa:

Mossler, 1 Geology of the Dubuque north quadrangle: Whitlow, 3.

Iowa Falls

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, northcentral Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological Field Conference, 1.

Iowan Glacial Drift

The classification of the Wisconsin glacial stage of north-central United States: Leighton, 1.

Characteristics of the Floyd and some related soils in Floyd and Bremer Counties, Iowa: Phillips, 1.

Properties and genesis of soils developed in very firm till in northeastern Iowa: Tyler,

Iordon Sandstone

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

The geology of Jefferson County, Iowa: Drahovzal, 1.

Juniper Hill Member

The Lime Creek Formation in the area of Garner, Iowa: Koch, 2.

Kankakee Formation

Geology of the Dubuque south quadrangle: Brown, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Kansan Drift

Ferrous iron content and color of sediments: Daniels, 3.

The geology of Jefferson County, Iowa: Drahovzal, 1.

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Kansas City Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Kenwood Member

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2

Keokuk Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

Stratigraphy of the Osage Series in southeastern Iowa: Harris, 1.

The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

Kinderhook Series

Kinderhook Series in the Mississippi Valley: Collinson, 1.

Early Mississippian (Lower Carboniferous-Tournaisian) micropaleontology in the United States: Gutschick, 1.

Lansing Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2. Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2.

LeClaire Dolomite

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2. Silurian bioherms of eastern Iowa: Hinman,

Lime Creek Formation

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

The geology of Jefferson County, Iowa: Drahovzal, I.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geo-logical Society of Iowa, 4; Koch, 1.

The Lime Creek Formation in the area of Garner, Iowa: Koch, 2.

Louisiana Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1. Devonian foraminifera: Part 1 - The Louisi-

ana Limestone of Missouri and Illinois:

Conodont faunas from the Louisiana and McCraney Formations of Illinois, Iowa, and Missouri: Scott, 1.

Loveland Loess

A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Castellano,

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Maple Mill Formation

Upper Devonian and Lower Mississippian

conodonts from north-central Iowa: Anderson, W. I., 1.

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

The geology of Jefferson County, Iowa: Drahovzal, 1.

Maquoketa Formation

Geology of the Dubuque south quadrangle: Brown, 1.

Lightweight aggregates: Expansion properties of clays, shales, and Precambrian rocks of Wisconsin: Cole, 1. The geology of Jefferson County, Iowa: Drahovzal, 1.

Maquoketa of northeast Iowa; Field Trip July 21, 1962: Geological Society of Iowa,

Microfossils of problematical affinity from the Maquoketa Formation of eastern Iowa

and western Illinois: Rhoads, 1. Early Silurian graptolites from the Edgewood Formation of Iowa: Ross, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Marmaton Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Mason City Member

The Lime Creek Formation in the area of Garner, Iowa: Koch, 2.

McCraney Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

The geology of Jefferson County, Iowa: Drahovzal, 1.

Conodont faunas from the Louisiana and McCraney Formations of Illinois, Iowa, and Missouri: Scott, 1.

McGregor Limestone Member

Geology of the Dubuque south quadrangle: Brown, 1 Geology of the Dubuque north quadrangle:

Whitlow, 3.

Meramecian Series

The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

Mississippian System Morphology of the blastoid Globoblastus norwoodi: Beaver, 1.

A Mississippian conodont fauna from Grundy County, Iowa: Binder, 1.

Lithostratigraphy and correlation of the Mississippian System in Nebraska: Carlson, M. P., 1.

The Kinderhook Series in the Mississippi

Valley: Collinson, 1.

Six charts showing biostratigraphic zones, and correlations based on conodonts from the Devonian and Mississippian rocks of the Upper Mississippi Valley: Collin-

The reorientation of calcite crystals in limestone: Curry, 1.

The geology of Jefferson County, Iowa: Drahovzal, 1. Our fascinating, enigmatic geodes: Flee-

Significance of lower Burlington conodont assemblages in southeastern Iowa:

Frerichs, 1. Early Mississippian (Lower Carboniferous-Tournaisian) micropaleontology in the United States: Gutschick, 1.

Stratigraphy of the Osage Series in south-

eastern Iowa: Harris, 1. Mississippian geodes of the Keokuk, Iowa

region: Hayes, 1. Kaolinite from Warsaw geodes, Keokuk region, Iowa: Hayes, 2.

Clay mineralogy of Mississippian strata in southeastern Iowa: Hayes, 3.

Geodes and concretions from the Mississippian Warsaw Formation, Keokuk region, Iowa, Illinois, Missouri: Hayes, 4. Ground water in Mississippian limestone

of Iowa (Abstract): Horick, 1. Dentiblastus - A new Blastoid genus from the Burlington Limestone (Mississippian):

Macurda, 1. A new spiraculate blastoid, Pyramiblastus from the Mississippian Hampton Forma-

tion of Iowa: Macurda, 2. Mining methods of the Fort Dodge Limestone Company, Inc., Fort Dodge, Iowa: Marshall, 1.

Petrology of the Hampton Formation at Iowa Falls, Iowa: Mason, 1.

Crinoids and starfish added to Iowa collection: Musgrove, 1.

Conodonts from the Pella Formation (Mississippian), south-central Iowa: Rexroad, 1

Refonte du genre Pugnoides Weller, S. 1910 (Rhynchonelloidea): Sartenaer, 1.

Conodont faunas from the Louisiana and McCraney Formations of Illinois, Iowa, and Missouri: Scott, 1.

The Middle Mississippian Series (Osagean and Meramecian) of northeastern Mis-

souri: Spreng, 1.
Guidebook for the twenty-fourth annual
Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, L. A., 1; Tri-State Geological Field Conference, 1.

Inclusive minerals of the Keokuk geodes: Tripp, 1. Petrology of the Hampton Formation at

Eagle City, Iowa: Vander Ley, I.
Stratigraphic studies of the Gilmore City
Formation at Rutland, Iowa: Wagner, I.

Missouri Series

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2. Mining and beneficiating methods and costs

at two crushed-limestone operations Madison County, Iowa: Marshall, 2. Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2.

Mosalem Member

Geology of the Dubuque south quadrangle: Brown, 1. Mt. Simon Formation

How Northern Natural operates aquifer gas storage: Anonymous, 1.

Nebraskan Till

The geology of Jefferson County, Iowa: Drahovzal, 1. Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2.

Neda Member

Geology of the Dubuque south quadrangle: Brown 1.

Niagaran Series

Unusual exposure of Silurian-Devonian un-conformity in Loomis quarry near Denver, Iowa: Dorheim, 1.

North Hill Group

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Ordovician System

How Northern Natural operates aquifer gas storage: Anonymous, 1

Geology of the Dubuque south quadrangle: Brown, 1.

The Collembola of Hunter's cave: Christiansen, 1.

Lightweight aggregates: Expansion properties of clays, shales, and Precambrian rocks of Wisconsin: Cole, 1. The geology of Jefferson County, Iowa:

Drahovzal, 1. Maquoketa of northeast Iowa; Field Trip July 21, 1962: Geological Society of Iowa,

Lightweight aggregates: Expansion erties of clays, shales, and argillites of Minnesota: Grosh, 1.

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

Biostratigraphic relations of the basal St. Peter Sandstone in northeast Iowa and southwest Wisconsin: Hart, 1.

Collembola of Hunter's cave - discussion: Hedges, 1.

Clay-mineral alteration in the Upper Mississippi Valley zinc-lead district: Heyl, 1. Qualitative X-ray emission analysis studies of enrichment of common elements in

wallrock alteration in the Upper Mississippi Valley zinc-lead district: Hosterman, 1.

Background radioactivity in the Decorah fault region: Lorenz, I

Ordovician potassium bentonites of Iowa:

Mossler, 1.

Spechts Ferry (Middle Ordovician) bryozoan fauna from Illinois, Wisconsin, and Iowa: Perry, 1. Microfossils of problematical affinity from

the Maquoketa Formation of eastern Iowa and western Illinois: Rhoads, 1.

Early Silurian graptolites from the Edgewood Formation of Iowa: Ross, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1. Geologic studies in Iowa: Whitlow, 1.

The Ordovician-Silurian contact in Dubuque County, Iowa: Whitlow, 2.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Osage Series

Early Mississippian (Lower Carboniferous-Tournaisian) micropaleontology in the United States: Gutschick, 1. Stratigraphy of the Osage Series in southeastern Iowa: Harris, 1. Mining methods of the Fort Dodge Lime-

stone Company, Inc., Fort Dodge, Iowa: Marshall, I.

The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

Otis Member

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2

Pearlette Ash Member

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Pecatonica Dolomite Member

Geology of the Dubuque south quadrangle: Brown, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

The conodont fauna and stratigraphy the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

Pedee Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Pella Formation

Conodonts from the Pella Formation (Mississippian) south-central Iowa: Rex-

Refonte du genre Pugnoides Weller, S. 1910 (Rhynchonelloidea): Sartenaer, 1.

Pennsylvanian System

Destructive distillation products of certain Iowa carbonaceous shales: Arnold, L. K., 1. Amyelon in American coal-balls: Cridland, 1. The geology of Jefferson County, Iowa: Drahovzal, 1.

Southwestern Iowa; Field Trip August 22-23, 1964: Geological Society of Iowa, 5.

Anochoropteris involuta and its attachment to a *Tubicaulis* type of stem from the Pennsylvanian of Iowa: Hall, 1.

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Fossil plants from cave deposits near Pella, Marion County, Iowa: Huffman,

The morphology and anatomy of Callipterid-ium sullivanti (Iowa-Kansas): Leisman, 1.

Mining and beneficiating methods and costs at two crushed-limestone operations, Madison County, Iowa: Marshall, 2. A calamitean shoot apex from the Pennsyl-

vanian of Iowa: Melchior, 1.

Economic significance of a buried bedrock bench beneath the Missouri River flood-plain near Council Bluffs, Iowa: Miller, R. D., 1.

Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2.

The environment of cyclic sedimentation and the paleoecology of the Altamont Formation (Desmoinesian) of Iowa, Missouri, Kansas, and northeastern Oklahoma: Schenk, L.

Pennsylvanian fossils of eastern Nebraska and western Iowa: White, 1.

Peorian Loess

A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska

and western Iowa: Castellano, 1. Property variation in the Peorian (Wisconsin) loess of southwestern Iowa: Davidson, 4.

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2

Platteville Formation

Geology of the Dubuque south quadrangle: Brown, 1.

The geology of Jefferson County, Iowa: Drahovzal, 1.

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1

Clay-mineral alteration in the Upper Mississippi Valley zinc-lead district: Heyl, 1. Qualitative X-ray emission analysis studies of enrichment of common elements in wallrock alteration in the Upper Missis-sippi Valley zinc-lead district: Hoster-

man, 1 Spechts Ferry (Middle Ordovician) bryozoan fauna from Illinois, Wisconsin, and

Iowa: Perry, 1. Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1

Geology of the Dubuque north quadrangle: Whitlow, 3.

Pleasanton Group

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Pleistocene Series

Geology of the Dubuque south quadrangle: Brown, 1.

Drift-filled valleys as ground-water sources in south-central Iowa (Abstract): Cagle, 1.

A study in clay mineralogy and the relationship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Castellano, 1.

Ferrous iron content and color of sediments: Daniels, 3.

Alluvial chronology of the Thompson Creek watershed, Harrison County, Iowa: Daniels, 5.

Depth studies of Wisconsin loess in southvestern Iowa - particle size and in-place density: Davidson, 3.

Property variation in the Peorian (Wisconsin) loess of southwestern Iowa: Davidson, 4. The geology of Jefferson County, Iowa:

Drahovzal, 1.

A late Wisconsin giant beaver in northern Iowa: Frankforter, 2

Stratigraphy and mineralogy of the Wisconsinan loesses of Illinois: Frye, I.

A post-Kansan peat at Grinnell, Iowa: A preliminary report: Graham, 1.
Ground water in Linn and Cerro Gordo Counties, Iowa, (Abstract): Hansen,

The Scotch Grove strath in Maquoketa

River valley, Iowa: Hedges, 2.

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2. Discovery of a calcareous fen complex in

northwest Iowa: Holte, I. The classification of the Wisconsin glacial

stage of north-central United States: Leighton, 1.

Sand and gravel operations and costs, West Des Moines, Iowa: Marshall, 3. Effect of vegetation on soils in the forest-

prairie region: McComb, 1.

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2. Characteristics of the Floyd and some re-

lated soils in Floyd and Bremer Counties, Iowa: Phillips, 1. Genesis and classification considerations

of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Distribution of manganese in a bio-topo sequence of southeastern Iowa soils:

Runge, 1. Pleistocene frost action in and near north-

eastern Iowa, (Abstract): Schafer, 1. Extent and distribution of soils in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Slusher, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

Pleistocene geology of Clark County, north-eastern Missouri: Stone, 1. Properties and genesis of soils developed in very firm till in northeastern Iowa:

Tyler, 1. Observations of bog and pollen stratigraphy

of the Des Moines glacial lobe: Walker, 1. Stone lines on Cary till: Wallace, R. W., Initial erosion effects on Cary drift plain, central Iowa: Wallace, R. W., 2.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Prairie du Chien Group

Geology of the Dubuque south quadrangle: Brown, 1.

The geology of Jefferson County, Iowa: Drahovzal, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1. Geology of the Dubuque north quadrangle:

Whitlow, 3.

Precambrian System

Geology of the Dubuque south quadrangle: Brown, 1.

Mineral age measurements and earth history: Aldrich, 1.

Preliminary interpretation of an aeromagnetic survey in north-central Iowa: Henderson, 1.

Preliminary interpretation of an aeromagnetic survey in central and southwestern Iowa: Henderson, 2.

Geology and ground-water Clayton County, Iowa: Steinhilber, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Prospect Hill Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Prosser Member

Ordovician potassium bentonites of Iowa: Mossler, 1.

Quaternary System

Geology of the Dubuque south quadrangle: Brown 1

Drift-filled valleys as ground-water sources in south-central Iowa (Abstract): Cagle, 1.

A study in clay mineralogy and the relation-ship of the clays to soils and texture in selected exposures of the Loveland and Peorian Formations in eastern Nebraska and western Iowa: Castellano, 1.

Missouri River studies: Alluvial morphology and Quaternary history: Dahl, 1.

Ferrous iron content and color of sediments: Daniels, 3.

Alluvial chronology of the Thompson Creek watershed, Harrison County, Iowa:

Depth studies of the Wisconsin loess in southwestern Iowa - particle size and in-place density: Davidson, 3.

Property variation in the Peorian (Wisconsin) loess of southwestern Iowa: Davidson, 4. The structure and stratigraphy of the Skvor-

Hartl area, southeast Linn County, Iowa: Dow, 2.

The geology of Jefferson County, Iowa: Drahovzal, 1.

A late Wisconsin giant beaver in northern Iowa: Frankforter, 2.

Stratigraphy and mineralogy of the Wisconsinan loesses of Illinois: Frye, 1. A post-Kansan peat at Grinnell, Iowa: A

preliminary report: Graham, 1. Ground water in Linn and Cerro Gordo Counties, Iowa (Abstract): Hansen,

R. E., 1. The Scotch Grove strath in Maquoketa River valley, Iowa: Hedges, 2.

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Discovery of a calcareous fen complex in

northwest Iowa: Holte, 1. The classification of the Wisconsin glacial stage of north-central United States: Leighton, 1.

Petrography of Quaternary concretions from western Iowa: Lohnes, 1. Sand and gravel operations and costs, West

Des Moines, Iowa: Marshall, 3 Effect of vegetation on soils in the forest-

prairie region: McComb, 1. Geology of the Omaha-Council Bluffs area,

Nebraska-Iowa: Miller, R. D., 2. Characteristics of the Floyd and some re-

lated soils in Floyd and Bremer Counties, Iowa: Phillips, 1.
Genesis and classification considerations

of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Distribution of manganese in a bio-topo sequence of southeastern Iowa soils: Runge, 1.

Pleistocene frost action in and near northeastern Iowa (Abstract): Schafer, 1.

Extent and distribution of soils in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Slusher, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1. Pleistocene geology of Clark County, north-

eastern Missouri: Stone, 1.

Properties and genesis of soils developed in very firm till in northeastern Iowa: Tyler, 1.

Observations of bog and pollen stratigraphy of the Des Moines glacial lobe: Walker, 1. Stone lines on Cary till: Wallace, R. W.,

Initial erosion effects on Cary drift plain, central Iowa: Wallace, R. W., 2.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Quimbys Mill Member

Geology of the Dubuque south quadrangle: Brown, 1.

Clay-mineral alteration in the Upper Mississippi Valley zinc-lead district: Heyl, 1. Geology of the Dubuque north quadrangle: Whitlow, 3.

Rapid Member

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2.

Recent Deposits

Genesis and classification considerations of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1 Geology of the Dubuque north quadrangle:

Whitlow, 3.

Ste. Genevieve Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

Refonte du genre Pugnoides Weller, S. 1910 (Rhynchonelloidea): Sartenaer, 1.

The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

St. Lawrence Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

A study of the St. Lawrence Formation in the Upper Mississippi Valley: Mc-Gannon, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, 1.

St. Louis Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

The middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

St. Peter Sandstone

How Northern Natural operates aquifer gas storage: Anonymous, 1. Geology of the Dubuque south quadrangle:

Brown, 1. The geology of Jefferson County, Iowa:

Drahovzal, 1.

The conodont fauna and stratigraphy of the Pecatonica Member of the Platteville Formation: Guldenzopf, 1.

Biostratigraphic relations of the basal St. Peter Sandstone in northeast Iowa and southwest Wisconsin: Hart, 1.

Geology and ground-water resources of Clayton County, Iowa: Steinhilber, I. Geology of the Dubuque north quadrangle: Whitlow, 3.

Salem Formation

The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

Sappa Formation

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Saverton Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Shawnee Group

Southwestern Iowa; Field Trip August 22-23, 1964: Geological Society of Iowa, 5. Highway construction materials from the consolidated rocks of southwestern Iowa: Hershev, 2.

Shell Rock Formation

Upper Devonian and Lower Mississippian conodonts from north-central Iowa: Anderson, W. I., 1.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological Society of Iowa, 4; Koch, 1.

Silurian System

Callipentamerus, a new genus of brachiopod from the Silurian of Iowa: Boucot, I

Geology of the Dubuque south quadrangle: Brown, 1.

Unusual exposure of Silurian-Devonian unconformity in Loomis quarry near Denver, Iowa: Dorheim, 1. The structure and stratigraphy of the Skvor-

Hartl area, southeast Linn County, Iowa:

Dow, 2.

Bioherms and biostromes in the Silurian-Devonian of eastern Iowa: Furnish, 1; Tri-State Geological Field Conference, 2

Ground water in Linn and Cerro Gordo Counties, Iowa (Abstract): Hansen, R. E., 1.

Collembola of Hunter's cave - discussion: Hedges, 1

Silurian bioherms of eastern Iowa: Hin-

man, 1. Early Silurian graptolites from the Edge-wood Formation of Iowa: Ross, 1. Geology and ground-water resources of Clay-

ton County, Iowa: Steinhilber, 1. Geologic studies in Iowa: Whitlow,

The Ordovician-Silurian contact in Dubuque County, Iowa: Whitlow, 2.

Solon Member

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow. 2.

Spechts Ferry Member

Geology of the Dubuque south quadrangle:

Ordovician potassium bentonites of Iowa: Mossler, 1.

Spechts Ferry (Middle Ordovician) bryo-zoan fauna from Illinois, Wisconsin, and Iowa: Perry, 1. Geology of the Dubuque north quadrangle:

Whitlow, 3.

Spergen Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

Spring Grove Member

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

Starr's Cave Formation

The Kinderhook Series in the Mississippi Valley: Collinson, 1.

Stewartville Member

Ordovician potassium bentonites of Iowa: Mossler, 1.

Sweetland Creek Shale

Conodont zonation of the early Upper Devonian in eastern Iowa: Klapper, 1.

Tete Des Morts Member

Geology of the Dubuque south quadrangle: Brown, 1.

Virgil Series

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Wabaunsee Group

Highway construction materials from the

consolidated rocks of southwestern Iowa: Hershey, 2

Wapsipinicon Formation

Unusual exposure of Silurian-Devonian unconformity in Loomis quarry near Denver, Iowa: Dorheim, 1.

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

The geology of Jefferson County, Iowa: Drahovzal, 1.

# Warsaw Formation

The geology of Jefferson County, Iowa: Drahovzal, 1.

Our fascinating, enigmatic geodes: Fleener,

Stratigraphy of the Osage Series in south-

eastern Iowa: Harris, 1. Mississippian geodes of the Keokuk, Iowa region: Hayes, 1.

Kaolinite from Warsaw geodes, Keokuk re-

gion, Iowa: Hayes, 2. Clay mineralogy of Mississippian strata in southeastern Iowa: Hayes, 3. Geodes and concretions from the Missis-

sippian Warsaw Formation, Keokuk region,

Iowa, Illinois, Missouri: Hayes, 4. The Middle Mississippian Series (Osagean and Meramecian) of northeastern Missouri: Spreng, 1.

Inclusive minerals of the Keokuk geodes: Tripp, 1.

Wisconsin Drift, Alluvium and Loess

Dark-colored bands in the thick loess of western Iowa: Daniels, 2. Depth studies of the Wisconsin loess in

southwestern Iowa - particle size and in-place density: Davidson, 3.

A late Wisconsin giant beaver in northern Iowa: Frankforter, 2. Stratigraphy and mineralogy of the Wiscon-

sinan loesses of Illinois: Frye, 1. Discovery of a calcareous fen complex in

northwest Iowa: Holte, 1. The classification of the Wisconsin glacial

stage of north-central United States: Leighton, 1.

Effect of vegetation on soils in the forestprairie region: McComb, 1. Genesis and classification considerations

of some prairie-formed soil profiles from local alluvium in Adair County, Iowa: Riecken, 1.

Distribution of manganese in a bio-topo sequence of southeastern Iowa soils: Runge,

Extent and distribution of soils in depressional areas in the Clarion-Nicollet-Webster soil association in Iowa: Slusher, 1. Stone lines on Cary till: Wallace, R. W., 1.

#### STRUCTURE

Decorah fault region

Background radioactivity in the Decorah fault region: Lorenz, 1.

Dubuque area

Geology of the Dubuque south quadrangle: Brown, 1.

Geology of the Dubuque north quadrangle: Whitlow, 3.

Forest City basin

New thinking may be key to unlocking Mis-souri prospects: Anderson, K. H., I. Prelininary interpretation of an aeromag-netic survey in central and southwestern Iowa: Henderson, 2.

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Lincoln fold

New thinking may be key to unlocking Missouri prospects: Anderson, K. H., 1.
The Lincoln fold of northeastern Missouri:

Koenig, 1.

Linn County

The structure and stratigraphy of the Skvor-Hartl area, southeast Linn County, Iowa: Dow, 2.

Manson "disturbed area"

Prelininary interpretation of an aeromagnetic survey in north-central Iowa: Henderson, 1.

Omaha-Council Bluffs area

Geology of the Omaha-Council Bluffs area, Nebraska-Iowa: Miller, R. D., 2.

Southeastern Iowa

Stratigraphy of the Osage Series in southeastern Iowa: Harris, 1.

Preliminary structure map of southeastern Iowa, 1961: datum, base of Osage Series, Burlington Limestone: Parker, 1

Thurman-Redfield structural zone

Preliminary interpretation of an aeromagnetic survey in central and southwestern Iowa: Henderson, 2.

Highway construction materials from the consolidated rocks of southwestern Iowa: Hershey, 2.

Underground gas storage in the northern plains, with particular reference to North-ern Natural Gas Company: Martinson, 1. A subsurface geological study of the Red-field gas-storage area: Valentine, 1.

Washington County

Geologic interpretation of magnetic map, Washington County, Iowa: Hase, 2.

# MISCELLANEOUS

Conservation

Problems of paleontological preservation in Iowa: Frankforter, 1.

Conservation of geologic features in Iowa: Gwynne, 2.

Fossil cleaning technique

Amazing new technique for cleaning fossils: Boyt, 2.

Geochronology

Mineral age measurements and earth history: Aldrich, 1.

Alluvial chronology of the Thompson Creek watershed, Harrison County, Iowa: Daniels, 5.

A post-Kansan peat at Grinnell, Iowa: A preliminary report: Graham, 1. Soils of Indian mounds in northeastern Iowa

as benchmarks for studies of soil genesis: Parsons, 1.

Geological education

College-level geology course for high-school students: Hayes, 5.

Guidebooks

Guidebook for the twenty-seventh annual Tri-State Geological Field Conference, Devonian-Silurian of eastern Iowa, October 26 and 27, 1963: Furnish, 1; Tri-State Geological Field Conference, 2.

Skvor-Hartl area, southeast Linn County, Iowa; Field Trip May 12, 1962: Geological

Society of Iowa, 1.

Maquoketa of northeast Iowa; Field Trip July 21, 1962: Geological Society of Iowa,

Silurian bioherms of eastern Iowa; Field Trip May 11, 1963: Geological Society of Iowa, 3; Hinman, 1.

Upper Devonian in Mason City and Garner areas; Field Trip July 20, 1963: Geological

Society of Iowa, 4; Koch, 1. Southwestern Iowa; Field Trip August 22-23, 1964: Geological Society of Iowa, 5.

Guidebook for the twenty-fourth annual Tri-State Geological Field Conference, north-central Iowa, October 8 and 9, 1960: Thomas, 1; Tri-State Geological Field Conference, 1.

#### MAPS

# Bedrock

Configuration of pre-Pleistocene bedrock surface of southeastern Nebraska: Burchett 1

Map of bedrock topography of northwestern Missouri: Heim, 1.

### Geologic

Geology of the Dubuque south quadrangle: Brown, 1.

Geologic map of the Precambrian rocks of north-central Iowa: Henderson, 1. Geologic map of the Precambrian rocks of

central and southwestern Iowa: Henderson, 2.

Geologic map of Missouri: McCracken, Geologic map of the Omaha-Council Bluffs area, Nebraska-Iowa: Loveland quad-rangle: Miller, R. D., 2. Geologic map of the Omaha-Council Bluffs area, Nebraska-Iowa: Omaha north-Coun-

cil Bluffs north quadrangle: Miller, R. D.,

Geologic map of the Omaha-Council Bluffs Nebraska-Iowa: Omaha south-Council Bluffs south quadrangle: Miller, R. D.,

Geology of the Dubuque north quadrangle: Whitlow, 3.

#### Geophysical

Aeromagnetic map of north-central Iowa: Henderson, 1.

Aeromagnetic map of central and southwestern Iowa: Henderson, 2.

Iowa gravity control and regional Bouguer anomaly map: Woollard, 2. Bouguer gravity anomaly map of the United States: Woollard, 3.

### Hydrologic

Ground water areas in Missouri: Knight, 1. Generalized map showing annual runoff and productive aquifers in the conterminous United States: McGuinness, 2. Stream composition of the conterminous

United States: Rainwater, 1.

Atlas of river basins of United States: U. S. Department of Agriculture, 6.

#### Isopach

Lithofacies maps, an atlas of the United States and southern Canada: Sloss, 1.

Lithofacies maps, an atlas of the United States and southern Canada: Sloss, 1.

#### Oil and gas

Atlas of products pipelines of the United States - 1963: Anonymous, 6.

Atlas of river basins of the United States: U. S. Department of Agriculture, 6.

Soil survey Polk County, Iowa: U. S. Depart-

Soil survey Fork County, Iowa: U. S. Department of Agriculture, 1.

Soil survey Jefferson County, Iowa: U. S. Department of Agriculture, 2.

Soil survey Lucas County, Iowa: U. S. Department of Agriculture, 3.

Soil survey Shelby County, Iowa: U. S. Department of Agriculture, 3.

partment of Agriculture, 4.

Soil survey Humboldt County, Iowa: U. S. Department of Agriculture, 5.

#### Structure

Preliminary structure map of southeastern Iowa, 1961: datum, base of Osage Series, Burlington Limestone: Parker, 1.

#### Topographic

An index map showing the current status of topographic mapping of Iowa is available from the Iowa Geological Survey, Iowa City, Iowa or the U. S. Geological Survey, Denver, Colorado on request.