BIBLIOGRAPHY

of the

Geology of Missouri

By

DARLING K. GREGER

Vol. XXXI, Second Series

EDWARD L. CLARK, *State Geologist and Director*

MISSOURI GEOLOGICAL SURVEY
AND WATER RESOURCES

ROLLA, MISSOURI

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Contents

Letter of Transmittal

Rolla, Missouri
April 30, 1945

Honorable Phil M. Donnelly,
Governor of Missouri,
Jefferson City, Missouri.

Dear Governor Donnelly:

I have the honor and pleasure to transmit herewith THE BIBLIOGRAPHY OF THE GEOLOGY OF MISSOURI, by Darling K. Greger.

The publication of the bibliography is of paramount value at this time. Many requests are made of the Missouri Geological Survey and Water Resources for references on various geological subjects. This compilation will be of definite value to those interested in the economic development of the mineral resources of the State; it will also meet the need of the academic geologist who is interested in the science of geology. The first section of the bibliography lists the publications by authors. The second section is a cross reference to publications pertaining to specific subjects and economic products.

Respectfully submitted,

EDWARD L. CLARK,
State Geologist.

Preface

EDWARD L. CLARK

The compilation of the bibliography was started by Mr. Darling K. Greger[1] under the supervision of Dr. H. A. Buehler, deceased, State Geologist of Missouri. After the death of Dr. Buehler the compilation was continued and the preliminary manuscript submitted in May, 1944. To give greater utility to the bibliography the second section was expanded and reorganized by Dr. Percival Robertson[2] during the summer months of 1944. Final reorganization and editing were completed by Messrs. Albert Kidwell and Richard S. Watson[3].

The Missouri Geological Survey and Water Resources is indebted to many organizations and individuals for assistance in making this bibliography as complete as possible. Acknowledgements are especially due to: University of Missouri, Graduate School and Department of Geology for the availability of unpublished theses; University of Missouri School of Mines and Metallurgy for unpublished theses; Washington University, St. Louis, Missouri, for unpublished theses; and the United States Geological Survey for titles of recent date which have not been included in published bibliographies of that agency.

1Fulton, Missouri, retired. Mr. Greger temporarily stepped out of retirement to compile this bibliography.

2Professor of Geology, The Principia College, Elsah Illinois. Geologist, summer appointment, Mo. Geol. Survey.

3Geologists, Mo. Geol. Survey.

Introduction

This bibliography is concerned with the literature of the various branches of geology and some phases of its allied sciences as they are found in the State of Missouri. The present volume is the fourth bibliography to be published by the Missouri Geological Survey, previous ones having appeared in 1855, 1890 and 1896. The majority of the geological literature dealing with Missouri has been written since the publication of the last bibliography, and the need for a new, comprehensive bibliography has become acute.

It is believed that most of the important titles concerned with the geology of Missouri have been included. A limited number of references describing areas adjacent to Missouri have been listed. Unquestionably some references have been missed. Where such ommissions are apparent to the reader of the volume, the titles should be referred to the Missouri Geological Survey in order that they may be added to future revisions.

Suggestions on using the bibliography: When looking for an article in the bibliography one should find the name of the author in the first section of the book, the bibliography proper. In instances where a reference has two or more authors, it is listed only under the name of the senior author. Beneath the name of the author will be found a list of all the articles written by that person, each identified by a number at the left and arranged in chronological order. The name of the citation is followed by a statement indicating the publication in which it appeared. Next is indicated the series number—if it has been issued in several series, followed by the volume, the number, the page or pages, and the date of publication. The place of publication is shown where this is deemed necessary. If the article was published as a book, the city and the name of the publisher are both included. A large number of abbreviations have been used in accordance with *Suggestions to Authors of the United States Geological Survey,* and a list of these abbreviations has been included.

In order to find what has been written about a given subject one should look for the topic in the second section of the bibliography. Under each topic will be found a list of references on that particular subject, each citation being followed by the name of the author and the number of the article. By referring back to the bibliography proper, the time and place of publication may be determined. It should be kept in mind that this index is not intended to be exhaustive. An attempt has been made to list only the more important references under each topic.

Much of the available information of the geology of Missouri has never been published. The Missouri Geological Survey is maintained for the benefit of the citizens of Missouri and is ready at all times to assist the public by giving information and assistance on geological subjects.

Abbreviations

Acad.—academy
Adj.—adjourned
Agri.—agriculture, agricultural
Am.—American
Ann.—annual
app.—appendix
apps.—appendices
approx.—approximate, approximately
Assoc.—association
Bibl.—bibliography
Bienn.—biennial
Bol.—Boletin
Bot.—botanical
Bull.—bulletin
Bur.—bureau
Can.—Canadian
Chem.—chemical
Circ.—Circular
Co.—county, company
Cos.—counties
Col.—collection
Coll.—college
Comm.—commercial
Comp.—comparative
Conf.—conference
Cong.—congress
Contr.—contributions
Conv.—convention
Dept.—department
Diss.—dissertation
Doc.—document
Econ.—economic
ed.—edited, edition
Eng.—engineers, engineering
Engl.—England
etc.—and so forth
et. seq.—et sequentes
Ex.—executive
Exp.—experiment, experimental
fasc.—fasciculus
fig.—figure
figs.—figures
fol.—folio
fold.—folded
front.—frontispiece
Gaz.—gazette
gen.—genus
Geog.—geographical
Geol.—geological
Geophys.—geophysical
Hist.—history, historical
il.—illustrated
ills.—illustrations
incl.—including
Ind.—industry
Indus.—industrial
Inf.—information
Inst.—institute
Internat.—international
Inv.—investigations
Jahrb.—Jahrbuch
Jour.—journal
Knowl.—knowledge
Mag.—magazine
Met.—metallurgy, metallurgical
Min.—mining
Misc.—miscellaneous
ms.—manuscript
Mtg.—meeting
Mus.—museum
Nat.—national, natural
no.—number
nos.—numbers
Occas.—occasional
opp.—opposite
Pan-Am.—Pan-American
Philos.—philosophical
Phys.—physical
pl.—plate
pls.—plates
Pop.—popular
portr.—portrait
p.—page
pp.—pages
Prest.—presented
Priv.—private
Proc.—proceedings

ABBREVIATIONS—Continued.

Prof.—professional
pt.—part
pts.—parts
Pub.—publication
Quart.—quarterly
Reg.—regents
Rept.—report
Rev.—review
Sci.—science
Seismol.—seismological
Sen.—senate
ser.—series
sess.—session
Soc.—society
sp.—species
Sta.—station
Summ.—summary
Suppl.—supplement
t.—tomo
Tech.—technical
Top.—topographic
Trans.—transactions
Univ.—university
U. S.—United States
vol.—volume

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BARRY COUNTY.

GEOLOGICAL report: Rutledge, R. B., 1.
LIME and CEMENT resources: Buehler, 1.
LEAD deposits: Winslow, 14.
MINERAL WATERS OF Missouri: Schweitzer, 3.
SAND and gravel resources: Dake, 8.
ZINC deposits: Winslow, 14.
The Fortune, a Devonian formation: Grohskopf, 6.
Early Mississippian formations: Moore, R. C., 2.
Roaring River Spring: Beckman, 1.
Eureka Springs-Harrison quadrangle: Purdue, 2.
Fayetteville quadrangle: Adams, G. I., 3.

BARTON COUNTY.

CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Preliminary report on COAL: Winslow, 3.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
GEOLOGICAL report: Broadhead, 42.
LIME resources: Buehler, 1.
MINERAL WATERS in Missouri: Schweitzer, 3.
OIL in Missouri: Wilson, M. E., 2.
QUARRYING industry: Buckley, 5.
SAND AND GRAVEL resources: Dake, 8.
Early Mississippian formations: Moore, R. C., 2.
Pennsylvanian series in Missouri: Hinds, 5.
St. Louis formation in southwestern Missouri: Clark, E. L., 2.

LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
OIL in Gower area: Greene, F. C., 9.
OIL in Missouri: Wilson, M. E., 2.
OIL pools: Greene, 4, 6, 8.
QUARRYING industry: Buckley, 5.
Pennsylvanian series in Missouri: Hinds, 5.
Pre-glacial drainage pattern: Greene, 7.

COLE COUNTY.
BARITE deposits of Missouri: Tarr, 7.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Fire CLAY districts: McQueen, 15.
COAL deposits of Missouri: Hinds, 4.
Preliminary report on COAL: Winslow, 3.
GEOLOGICAL report: Broadhead, 51.
IRON ores of Missouri: Nason, 2; Crane, G. W., 1.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
MINERALOGY of Cole Co.: Broadhead, 12.
MINES: Broadhead, 59.
QUARRYING industry: Buckley, 5.
SAND and GRAVEL resources: Dake, 8.
ZINC deposits: Winslow, 14.
Devonian of Missouri: Branson, 12.

COOPER COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
COAL deposits of Missouri: Hinds, 4.
Preliminary report on COAL: Winslow, 3.
GEOLOGY of Cooper Co.: Swallow, 3.
LEAD deposits: Winslow, 14.
LIME RESOURCES: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3,
QUARRYING industry: Buckley, 5.
ROCK WOOL resources: McQueen, 11.
ZINC deposits: Winslow, 14.
Devonian of Missouri: Branson, 12.
Early Mississippian formations: Moore, R. C., 2.

CRAWFORD COUNTY.
CEMENT resources: Buehler, 1.
Fire CLAY districts: McQueen, 15.
CLAY deposits: Wheeler, 7.
COAL deposits of Missouri: Hinds, 4.
GEOLOGICAL report: Shumard, 13.
GEOLOGICAL reconnaissance work: Hughes, 2.
GEOLOGIC section Cuba to St. James: Benham, 1.
GEOLOGY of area on Crooked Creek: Hughes, 3.
IRON ores of Missouri: Crane, G. W., 1: Nason, 2, Schmidt, 1.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
SAND and GRAVEL resources: Dake, 8.
ZINC deposits: Winslow, 14.
Crystalline rocks of Missouri: Haworth, 10.
Large springs: Beckman, 1.
Stone-age man in Crawford Co.: Chapman, 1.

DADE COUNTY.
CEMENT resources: Buehler, 1.
Preliminary report on COAL: Winslow, 3.
COAL deposits of Missouri: Hinds, 4.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
SAND and GRAVEL resources: Dake, 8.
ZINC deposits: Winslow, 14.
Early Mississippian formations: Moore, R. C., 2.
St. Louis formation in southwestern Missouri: Clark, E. L., 2.

DALLAS COUNTY.
CEMENT resources: Buehler, 1.
IRON ores of Missouri: Crane, G. W., 1.
LEAD and ZINC deposits: Winslow, 14.
LIME resources: Buehler, 1.
Reconnaissance work: Hughes, 2.

DAVIESS COUNTY.
CEMENT resources: Buehler, 1.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
GEOLOGICAL report: Broadhead, 50.
GEOLOGY of northwestern Missouri: McQueen, 1.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
OIL in Missouri: Wilson, M. E., 2.
QUARRYING industry: Buckley, 5.
Pennsylvanian series in Missouri: Hinds, 2.
Pre-glacial drainage pattern: Greene, 7.

DEKALB COUNTY.
CEMENT resources: Buehler, 1.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
GEOLOGY of northwestern Missouri: McQueen, 12.
LIME resources: Buehler, 1.
OIL in Missouri: Wilson, M. E., 2.

MARIES COUNTY.
CEMENT resources: Buehler, 1.
Fire CLAY districts: McQueen, 15.
GEOLOGICAL report: Broadhead, 13.
IRON ores of Missouri: Crane, G. W., 1.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
SAND and GRAVEL resources: Dake, 8.
ZINC deposits: Winslow, 14.
Paydown Spring: Beckman, 1.

MARION COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
COAL deposit of Missouri: Hinds, 4.
GEOLOGY of Marion Co.: Swallow, 3.
GEOLOGIC section at Hannibal: Grohskopf, 5.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
MINERAL waters of Missouri: Schweitzer, 3.
QUARRYING industry: Buckley, 5.
SAND and GRAVEL resources: Dake, 8.
Area near Hannibal: Bumgardner, 1.
Early Mississippian formations: Moore, R. C., 2.
Crinoids and blastoids from Subcarboniferous: Rowley, 9.
Mississippi Valley area: Krey, 1.

MERCER COUNTY.
CEMENT resources: Buehler, 1.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
OIL in Missouri: Wilson, M. E., 2.
QUARRYING industry: Buckley, 5.
Pennsylvanian series in Missouri: Hinds, 5.
Pre-glacial drainage pattern: Greene, 7.

MILLER COUNTY.
BARITE deposits of Missouri: Tarr, 7.
CEMENT resources: Buehler, 1.
Preliminary report on COAL: Winslow, 3.
COAL deposits of Missouri: Hinds, 4.
GEOLOGY of Miller Co.: Ball, S. H., 1; with introduction by Buckley, 2.
GEOLOGIC report on Miller Co.: Meek, 20.
IRON ores of Missouri: Crane, G. W., 1; Schmidt, 1.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
QUARRYING industry: Buckley, 5.
SAND and GRAVEL resources: Dake, 8.
ZINC deposits: Winslow, 14.
Glacial boulders at Tuscumbia: Wright, G. F., 3.

MISSISSIPPI COUNTY.
CEMENT resources: Buehler, 1.
Bleaching CLAYS: Farrar, 2.
GEOLOGY of Mississippi Co.: Farrar, 2.
LIME resources: Buehler, 1.
Southeastern Missouri lowlands: Marbut, 10, 11.

MONITEAU COUNTY.
BARITE deposits of Missouri: Tarr, 7.
CEMENT resources: Buehler, 1.
Preliminary report on COAL: Winslow, 3.
COAL deposits of Missouri: Hinds, 4.
GEOLOGICAL report, introduction: Buckley, 9.
GEOLOGICAL report on Moniteau Co.: Meek, 1; Van Horn, 1.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
ROCK WOOL resources: McQueen, 11.
ZINC deposits: Winslow, 14.
Resources of Moniteau Co.: Haywood, 1.
Devonian of Missouri: Branson, 12.
Early Mississippian formations: Moore, R. C., 2.

MONROE COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Fire CLAY districts: McQueen, 15.
COAL deposits of Missouri: Hinds, 4.
Preliminary report on COAL: Winslow, 3.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
QUARRYING industry: Buckley, 5.
SAND and GRAVEL resources: Dake, 8.
Early Mississippian formations: Moore, R. C., 2.
Pennsylvanian series in Missouri: Hinds, 5.

MONTGOMERY COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Cheltenham CLAY: Allen, V. T., 10.
Fire CLAY districts: McQueen, 15.
Preliminary report on COAL: Winslow, 3.
COAL deposits of Missouri: Hinds, 4.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2.

IRON ores of Missouri: Crane, G. W., 1; Nason, 2.
LIME resources: Buehler, 1.
SAND and GRAVEL resources: Dake, 8.
Large springs: Beckman, 1.

PEMISCOT COUNTY.
CEMENT resources: Buehler, 1.
Bleaching CLAYS: Farrar, 2.
GEOLOGY of southeast Missouri: Farrar, 2.
LIME resources: Buehler, 1.
Southeastern Missouri lowlands: Marbut, 10, 11.
Wells of Pemiscot Co.: Shepard, E. M., 5.

PERRY COUNTY.
CEMENT resources: Buehler, 1.
GEOLOGY of parts of Perry and Cape Girardeau Co.: Flint, 3, 4.
GEOLOGICAL report: Shumard, 13.
IRON ores of Missouri: Crane, G. W., 1.
Grand Tower Iron works: King, 10.
LEAD deposits: Winslow, 14.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
SAND and GRAVEL resources: Dake, 8.
ZINC deposits: Winslow, 14.
Dutchtown, Ordovician formation: McQueen, 10.
Devonian of Missouri: Branson, 12.
Early Mississippian formations: Moore, R. C., 2.
Dickite and fluorite in Cambrian and Ordovician: Grohskopf, 2.
Strontium minerals: McQueen, 9.
Cote Sans Dessein (Missouri) and Grand Tower (Illinois): Marbut, 9.
Perryville meteorite: Merrill, 3.

PETTIS COUNTY.
CEMENT resources: Buehler, 1.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
OIL in Missouri: Wilson, M. E., 2.
QUARRYING industry: Buckley, 5.
ROCK WOOL resources: McQueen, 11.
Devonian of Missouri: Branson, 12.
Early Mississippian formations: Moore, R. C., 2.
Sub-Carboniferous series at Sedalia: Sampson, 2.
Natural history: Sampson, 1.

PHELPS COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Fire CLAY districts: McQueen, 15.
Fire CLAYS of Phelps Co.: Cronk, 1.
COAL deposits of Missouri: Hinds, 4.
COPPER banks of Phelps Co.: Fay, 1.
GEOLOGICAL report, 1874: Shumard, 13.
GEOLOGIC section, St. James to Cuba: Benham, 1.
GEOLOGY from Rolla to Newburg: Hughes, 1.
GEOLOGY of Rolla quadrangle: Lee, 2.
Topography and GEOLOGY of Panther Bluffs: Maveety, 1.
GEOLOGY of Beaver quadrangle, Phelps Co.: Paulette, 1.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2; Schmidt, 1.
IRON banks of Phelps Co.: Fay, 1.
IRON ores at Buckland's Bank: Garvans, 1.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
Phelps Co., ORES: Price, 1.
QUARRYING industry: Buckley, 5.
SAND and GRAVEL resources: Dake, 8.
Rolla WATER supply: Anderson, 1.
Revision of Jefferson City formation in Rolla quadrangle: Cullison, 1.
Sandstone member of Jefferson City and Cotter formations: Grawe, 3.
Roubidoux near Rolla: Schulty, J. E., 1.
Faunas of residual Mississippian: Bridge, 2.
Basal Cherokee in Rolla area: Murphy, 1.
Newburg district: Lee, 1.
Ankerite from Phelps Co.: Rogers, 1.
Salt peter cave, map and geology: Detweiler, 1.
Power utilization at Meramec Spring: Walsh, 1.
Meteorite fall at Little Piney (Arlington) 1839: Herrick, E. C., 1.
Analysis of Little Piney meteorite (Arlington): Shepard, 2.
Meramec and other large springs: Beckman, 1, 2.

PIKE COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Fire CLAY districts: McQueen, 15.
COAL deposits of Missouri: Hinds, 4.
GEOLOGICAL report, introduction: Buckley, 15.
GEOLOGICAL cross section: Grohskopf, 5.
Subsurface GEOLOGY: Grohskopf, 3.
GEOLOGY of Pike Co.: Rowley, 24.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.

GAS pools: Greene, 4.
GAS in Missouri: Wilson, M. E., 2.
GEOLOGY of Lexington sheet: Marbut, 7.
GEOLOGY of Richmond quadrangle: Marbut, 8.
GEOLOGY of northwestern Missouri: McQueen, 12.
LIME resources: Buehler, 1.
OIL pools: Greene, 4.
OIL in Missouri: Wilson, M. E., 2.
OIL springs in Missouri: Shumard, 10.
QUARRYING industry: Buckley, 5.
Pennsylvanian series in Missouri: Hinds, 5.
Pre-glacial drainage pattern: Greene, 7.

REYNOLDS COUNTY.
CEMENT resources: Buehler, 1.
GEOLOGY of Eminence-Cardareva quadrangle: Bridge, 6.
GEOLOGY of Potosi and Edgehill quadrangle: Dake, 15.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2.
LIME resources: Buehler, 1.
MANGANESE deposits: Grawe, 7.
Geographical notes: Broadhead, 70.
Crystalline rocks of Missouri: Haworth, 10.
Large springs: Beckman, 1.

RIPLEY COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
IRON ores of Missouri: Crane, G. W., 1.
IRON ores of Missouri: Nason, 2.
LIME resources: Buehler, 1.
MANGANESE deposits: Grawe, 7.

ST. CHARLES COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
COAL deposits of Missouri: Hinds, 4.
LIME resources: Buehler, 1.
QUARRYING industry: Buckley, 5.
SAND and GRAVEL resources: Dake, 8.
Early Mississippian formations: Moore, R. C., 2.
The loess near St. Louis: Robertson, P., 2.
Mississippi Valley area: Krey, 1.

ST. CLAIR COUNTY.
CEMENT resources: Buehler, 1.
Preliminary report on COAL: Winslow, 3.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2: Schmidt, 1.
LIME resources: Buehler, 1.
MINERAL WATERS of Missouri: Schweitzer, 3.
MINERAL waters of St. Clair Co.: Woodward, A. E., 1.
OIL in Missouri: Wilson, M. E., 2.
QUARRYING industry: Buckley, 5.
Early Mississippian formations: Moore, R. C., 2.

ST. FRANCOIS COUNTY.
BARITE deposits of Missouri: Tarr, 7.
CEMENT resources: Buehler, 1.
GEOLOGY of Iron Mountain: Winslow, 15.
GEOLOGY of Mine LaMotte sheet: Keyes, 29.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2.
LEAD deposits: Winslow, 14.
Disseminated LEAD deposits: Buckley, 22.
Southeast Missouri LEAD district: Broadhead, 74.
LIME resources: Buehler, 1.
Mines in 1855: Litton, 1.
Valley MINE dumps: U. S. Bureau of Mines, 11.
QUARRYING industry: Buckley, 5.
ZINC deposits: Winslow, 14.
Crystalline rocks of Missouri: Haworth, 10.
Prismatic sandstone near Knob Lick: Haworth, 11.
Cambrian fossils: Beecher, 1.

STE. GENEVIEVE COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Ste. Genevieve Co. COPPER mine: Gage, 5.
Ste. Genevieve COPPER deposit: Nicholson, 1.
Cornwall mines and primary COPPER: Rust, 1.
Another Missouri Copper mine: Anon., 4.
GEOLOGY of Ste. Genevieve Co.: Weller, S., 27.
GEOLOGY of Weingarten quadrangle: Bodman, 1.
GEOLOGY of Mine LaMotte sheet: Keyes, 29.
Igneous GEOLOGY of Ste. Genevieve Co.: Kidwell, 1.
GEOLOGY of Ste. Genevieve Co.; 1859: Shumard, 6.
GEOLOGICAL report, 1875: Shumard, 13.
IRON ores of Missouri: Crane, G. W., 1.
LEAD deposits: Winslow, 14.
LEAD ores from Ste. Genevieve Co., 1814: Meade, 1.
LIME resources: Buehler, 1.

SCHUYLER COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
COAL deposits of Missouri: Hinds, 4.
Preliminary report on COAL: Winslow, 3.
GAS in Missouri: Wilson M. E., 2.
GEOLOGICAL report on Schuyler Co.: Norwood, C. J., 5.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
OIL in Missouri: Wilson, M. E., 2.
Pennsylvanian series in Missouri: Hinds, 5.

SCOTLAND COUNTY.
CEMENT resources: Buehler, 1.
COAL deposits of Missouri: Hinds, 4.
GAS in Missouri: Wilson, M. E., 2.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
OIL in Missouri: Wilson, M. E., 2.
Early Mississippian formations: Moore, R. C., 2.
Pennsylvanian series in Missouri: Hinds, 5.

SCOTT COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7; Davis, W. E., 1.
GEOLOGY and bleaching CLAYS: Farrar, 2.
LIME resources: Buehler, 1.
QUARRYING industry: Buckley, 5.
SAND ond GRAVEL resources: Dake, 8.
Dutchtown, Ordovician formation: McQueen, 10.
Marine beds of Eocene age: Berry, 1.
Folded structure near Commerce: Stewart, D. R., 2.
Southeastern Missouri lowlands: Marbut, 10, 11.

SHANNON COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
COPPER deposits: Bowles, 1; Greason, 1.
GEOLOGY of Eminence-Cardareva quadrangle: Bridge, 6.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2.
LIME resources: Buehler, 1.
MANGANESE deposits: Grawe, 7.
QUARRYING industry: Buckley, 5.
Crystalline rocks of Missouri: Haworth, 10.
Alley, Welsh and other large springs: Beckman, 1, 2.
Ebb and Flow Spring: Bridge, 4.

SHELBY COUNTY.
CEMENT resources: Buehler, 1.
CLAY deposits: Wheeler, 7.
Fire CLAY districts: McQueen, 15.
COAL reposits of Missouri: Hinds, 4.
Preliminary report on COAL: Winslow, 3.
GEOLOGICAL report: Broadhead, 16.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
SAND and GRAVEL resources: Dake, 8.
Early Mississippian formations: Moore, R. C., 2.

STODDARD COUNTY.
CEMENT resources: Buehler, 1.
BAUXITIC CLAY: Stewart, 1.
Geology and bleaching CLAYS: Farrar, 2.
CLAY deposits: Wheeler, 7; Davis, W. E., 1.
GEOLOGY of Stoddard Co.: Farrar, 3.
GEOLOGY of Crowley's Ridge: Branner, 1.
IRON ores of Missouri: Crane, G. W., 1; Nason, 2.
LIME resources: Buehler, 1.
SAND and GRAVEL resources: Dake, 8.
Marine beds of Eocene age: Berry, 1.
Lowlands of southeastern Missouri: Marbut, 10, 11.

STONE COUNTY.
CEMENT resources: Buehler, 1.
Galena-Joplin LEAD district: Haworth, 14-16.
LIME resources: Buehler, 1.
Galena-Joplin ZINC district: Haworth, 14-16.
Early Mississippian formations: Moore, R. C., 2.
Fossil wood in Reeds Spring formation: Cribbs, 1-8.
The Baxter meteorite: Nininger, 2, 3.
Eureka Springs-Harrison quadrangle: Purdue, 2.

SULLIVAN COUNTY.
CEMENT resources: Buehler, 1.
COAL deposits of Missouri: Hinds, 4.
Preliminary report on COAL: Winslow, 3.
GAS in Missouri: Wilson, M. E., 2.
GEOLOGICAL report: Broadhead, 46.
Subsurface GEOLOGY: Grohskopf, 3.
LIME resources: Buehler, 1.
OIL in Missouri: Wilson, M. E., 2.
QUARRYING industry: Buckley, 5.
Pennsylvanian series in Missouri: Hinds, 5.
Pre-glacial drainage pattern: Greene, 7.

TANEY COUNTY.
CEMENT resources: Buehler, 1
Reconnaissance GEOLOGY work: Hughes, 2.

Economic Geology, Mining and Metallurgy

Mining diaspore and flint clays: McQueen, 1.
Geologic relations of diaspore and flint clays: McQueen, 4.
The diaspore clays of Missouri: Swartzlow, 2.
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Fire.

Cheltenham clay: Allen, V. T., 7, 10.
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Fire clay of east central Missouri: McQueen, 16.
Refractory clays of Missouri: Moore, G. E., 1.
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Fire clays of Missouri: Wheeler, 10.

Flint.

Mineral composition and orgin of flint clay: Allen, V. T., 5.
Winning of Missouri clays: Forbes, 1.
Sandstone covered flint clay: Keller, 5.
Mining diaspore and flint clays: McQueen, 1.
Geologic relations of diaspore and flint clays: McQueen, 4.

General.

Geology of Miller Co.: Ball, S. H., 1.
Paints and clays: Broadhead, 5.
Geology of the Potosi-Edgehill Quadrangles: Dake, 15.
Further investigations of southeastern Missouri clays: Davis, W. E., 1.
Geology of Stoddard Co.: Farrar, W., 3.
Clay resources of St. Louis district: Fenneman, 1.
Ceramic engineering: Freeman, 1.
Technical problems in ceramics: Greaves-Walker, 1.
Popular review of ceramic history: Haberman, 1.
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Geological occurrence of clays: Keyes, 19.
Distribution and character of Missouri clays: Keyes, 35.
Clays, etc.: Ladd, 1-4.
Geology of the Rolla Quadrangle: Lee, W., 2.
Geology of Jackson Co.: McCourt, 1.
Clay resources of Perry area: McQueen, 3.
Fire clay districts in east central Missouri: McQueen, 16.
Geology of the Calhoun Sheet: Marbut, 4.
Geology of the Clinton Sheet: Marbut, 5.
Geology of the Lexington Sheet: Marbut, 7.
Geology of the Richmond area: Marbut, 8.
Geology of Morgan Co.: Marbut, 15.
Kaolin deposits of Bollinger Co.: Orton, 1.
The clay-working industry in 1896: Ries, 1.
High-grade clays of the eastern United States, with notes on some western clays: Ries, H., 2.
Geology of Pike Co.: Rowley, 24.
Zinciferous clays of southwest Missouri: Seamon, 1.
Clays of Missouri: Shepard, E. M., 1.
Geology of Greene Co.: Shepard, E. M., 2.
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Geology of Moniteau Co.: Van Horn, F. B., 1.
Clays and shales: Wheeler, 3.
Clay deposits and resources: Wheeler, 7, 8.
Clays of Washington Co.: Woolford, 1.
Clay and minerals of Missouri: Woolford, 2.

Tallow.

Geology of the Granby area: Buckley, 11.
Miscellaneous analyses, tallow clays: Clark, F. W., 1.
Tallow clays of southwestern Missouri: Seamon, 2.

COAL.

Analyses and Tests.

Analyses of fuels: Blair, 2.
Boiler tests: Breckenridge, 1, 2.
Steaming tests: Breckenridge, 3, 4.
Analyses of Missouri coal: Campbell, M. R., 1-5.
Analyses of Missouri fuels: Chauvenet, R., 1, 2.
Washing tests on Missouri coals: Delameter, 1, 2.
Producer-gas tests on Missouri coals: Fernald, 1-4.
Analyses of Missouri coals: Fieldner, 1.
Coal deposits of Missouri: Hinds, 4.
Analyses of Missouri coals: Lord, 1-5.
Briquetting tests on Missouri coal: Malcomson, 1.

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Field work on Missouri coal for fuel tests: Parker, E. W., 19.
Briquetting tests on Missouri coal: Pratt, 1, 2.
Coal analysis: Schweitzer, 2.
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Coking tests of Missouri coal: Stammler, 1, 2.
Washing tests on Missouri coal: Wick, 1, 2.

Coal Fields and Deposits.

Cannel coal in the United States: Ashley, 1.
Coal fields near Springfield: Arnold, A., 2.
Geology of Miller Co.: Ball, S. H., 1.
Mystic coal basin (North Missouri): Bain, 1, 2.
Western interior coal fields: Bain, 7.
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Southwest coal fields: Broadhead, 39, 54, 76.
Coal deposits of southwest Missouri: Broadhead, 117.
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Coal fields of Missouri: Bush, 1.
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Mining thin coal seams in Missouri: Gluck, 1.
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Geology of northwestern Missouri: McQueen, 12.
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Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

DEVONIAN SYSTEM.

Devonian in Missouri: Branson, 6, 11, 12, 18, 47.
Correlation of Devonian in Illinois and Missouri: Branson, 51; Cooper, G. A., 1; Croneis, 4; Weller, J. M., 18.
Devonian-Mississippian contact: Branson, 16, 44.
Devonian outlier near crest of Ozarks: Bridge, 3.
Devonian of north Missouri: Broadhead, 125.
Correlation of Devonian formations of North America: Cooper, G. A., 1A.
Devonian of Boone County: Decker, 1.
Stratigraphy and correlations of the Devonian of western Tennessee: Dunbar, 1.
Devonian of central Missouri: Gregor, 7, 12, 17, 18.
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Subsurface geology of northeast Missouri: Grohskopf, 3.
Heavy accessory minerals of Devonian sandstones of southern Missouri: Gruner, 1.
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Devonian of southwestern Missouri: Hersey, 1, 3.
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Easternmost extension of western Devonic limestones: Keyes, 161.
Structural reconnaissance of the Mississippi Valley area: Krey, 1.
Geology of Morgan Co.: Marbut, 15.
Devonian system in Arkansas and Oklahoma: Miser, 1.
Devonian of Ralls Co.: Moore, G. P., 1.
Geology of Pike Co.: Rowley, 24.
Devonian formations of Illinois: Savage, 8-11.
Paleogeography of the Devonian: Schuchert, 20.
Devonian system of Iowa: Stainbrook, 1.
Post-Devonian igneous intrusion: Tarr, 34.
Geology of Moniteau Co.: Van Horn, F. B., 1.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Former extension of Devonian formations in southeastern Missouri: Weller, S., 26.
Devonian and Carboniferous: Williams, H. S., 2.

DOE RUN FORMATION. Refer also to ELVINS.

Geology of Missouri: Branson, 52.
Geology of the disseminated lead deposits of St. Francois and Washington Cos.: Buckley, 22.
Lime and cement resources of Missouri: Buehler, 1.
Iron ores of Missouri: Crane, G. W., 1.
Geology of the Potosi-Edgehill Quadrangles: Dake, 15.
Subsurface geology of northeast Missouri: Grohskopf, 3.
Insoluble residues as a guide in stratigraphic studies: McQueen, 5.
Superfluity of Doe Run title in Missouri: Keyes, 145.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

DONIPHAN SHALE.

Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

DOUGLAS FORMATION.

Pennsylvanian system in Nebraska: Condra, 1.
Coal deposits of Missouri: Hinds, 4.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Leavenworth-Smithville Folio: Hinds, 6.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

EUDORA SHALE.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Correlation of Pennsylvanian beds in Nebraska: Condra, 2.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

EUREKA COAL HORIZON.
Report on Bevier Sheet: Gordon, 3.
Coal deposits of Missouri: Hinds, 4.

EUREKA SHALE. Now called CHATTANOOGA.
Geology of Greene Co.: Shepard, E. M., 2.

EVERTON FORMATION.
Sand and gravel resources of Missouri: Dake, 8.
Problem of the St. Peter sandstone: Dake, 9.
Subsurface geology of northeast Missouri: Grohskopf, 3.
Everton in southeast Missouri: McQueen, 10.
Eureka Springs-Harrison Folio: Purdue, 2.
Geology of Ste. Genevieve Co.: Weller, S., 27.

EXLINE LIMESTONE.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Traverse of upper Des Moines and lower Missouri series: Cline, 4.

FARLEY LIMESTONE.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

FAYETTEVILLE FORMATION.
Fayetteville Folio: Adams, G. I., 3.
Geology of Missouri: Branson, 52.
Geology of the Cassville Quadrangle: Clarke, E. L., 3A.

FERN GLEN FORMATION.
Geology of Missouri: Branson, 52.
Relation of Reeds Spring to Fern Glen formation: Gillerman, 1.
Kansas Geological Society 9th annual field conference guidebook: Kansas Geological Society, 3A.
Kinship of Fern Glen limestone of Missouri: Keyes, 115.
Invalidation of Fern Glen terrane: Keyes, 120.
Structural reconnaissance of the Mississippi Valley area: Krey, 1.
Early Mississippian formations in Missouri: Moore, R. C., 2.
Revision of the Paleozoic systems: Ulrich, 21.
Faunal zones in Mississippian section: Weller, S., 26A.
Geology of Ste. Genevieve Co.: Weller, S., 27.

FERNVALE LIMESTONE.
Geology of Missouri: Branson, 52.
Insoluble residues as a guide in stratigraphic studies: McQueen, H. S., 5.
Eureka Springs-Harrison Folio: Purdue, 2.
Fernvale correlations: Shideler, 1.
Geology of Ste. Genevieve Co.: Weller, S., 27.

FERRUGINOUS SANDSTONE. Now called AUX VASES.
General geology of Missouri: Broadhead, 35.
Geology of Lincoln Co.: Potter, W. B., 1.
Second annual report Geological Survey of Missouri: Swallow, 2.

FIRST MAGNESIAN LIMESTONE. Now called JOACHIM.
General geology of Missouri: Broadhead, 35.
Geology of Lincoln Co.: Potter, W. B., 1.
Second annual report Geological Survey of Missouri: Swallow, 2.

FIRST SANDSTONE. Now called St. PETER.
General geology of Missouri: Broadhead, 35.

FONTANA SHALE.
Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Kansas Geological Society 6th annual field conference guidebook: Kansas Geological Society, 2.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

FORT SCOTT LIMESTONE. Refer also to OSWEGO.
Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.

Traverse of upper Des Moines and lower Missouri series: Cline, 4.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

FORTUNE FORMATION.
Geology of Missouri: Branson, 52.
Geology of the Cassville Quadrangle: Clark, E. L., 3A.
The Fortune, a new Devonian formation in southwest Missouri: Grohskopf, 6.

FOURTH MAGNESIAN LIMESTONE. Includes everything from top of BONNETERRE to top of EMINENCE.
General geology of Missouri: Broadhead, 35.
Second annual report Geological Survey of Missouri: Swallow, 2.

FREDERICKTOWN LIMESTONE. Includes ELVINS GROUP AND BONNETERRE.
Report on Mine La Motte Sheet: Keyes, 29.

FRIEDRICH SHALE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

FRISBIE LIMESTONE.
Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

GALESBURG SHALE.
Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Kansas Geological Society 6th annual field conference guidebook: Kansas Geological Society, 2.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

GASCONADE DOLOMITE. Refer also to OSAGE and THIRD MAGNESIAN.
Geology of Miller Co.: Ball, S. H., 1.
Geology of Missouri: Branson, 52.
Geology of the Eminence-Cardareva Quadrangles: Bridge, 6.
Geology of the Potosi-Edgehill Quadrangles: Dake, 15.
Subsurface geology of northeast Missouri. Grohskopf, 3.
Geology of the Rolla Quadrangle: Lee, W., 2.
Insoluble residues as a guide in stratigraphic studies: McQueen, 5.
Geology of Morgan County: Marbut, 15.
Iron ores of Missouri: Nason, 2.
Revision of the Paleozoic systems: Ulrich, 21.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Lead and zinc deposits of Missouri: Winslow, 14.

GIRARDEAU LIMESTONE. Refer also to CAPE GIRARDEAU.
Geology of Missouri: Branson, 52.
Quarrying industry of Missouri: Buckley, 5.
Alexandrian series in Missouri and Illinois: Savage, T. E., 3, 4.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

GLEN DEAN LIMESTONE.
Geology of Missouri: Branson, 52.
Geology of Perry and Cape Girardeau Cos.: Flint, 3, 4.

GLEN PARK LIMESTONE.
Lower Mississippian of Missouri: Branson, 38, 52.
Kansas Geological Society 9th annual field conference guidebook: Kansas Geological Society, 3A.
Early Mississippian formations of Missouri: Moore, R. C., 2.
Geology of Ste. Genevieve Co.: Weller, S., 27.

GOLCONDA FORMATION.
Geology of Missouri: Branson, 52.
Geology of Perry and Cape Girardeau Cos.: Flint, 3, 4.
Geology of Ste. Genevieve Co.: Weller, S., 27.

GRAND FALLS CHERT.
Geology of Missouri: Branson, 52.
Eureka Springs-Harrison Folio: Purdue, 2.
Joplin District Folio: Smith, W. S. T., 2A.
Lead and zinc deposits of Missouri: Winslow, 14.

GRAND TOWER LIMESTONE.
Geology of Missouri: Branson, 52.
Quarrying industry in Missouri: Buckley, 5.
Paleontology of Missouri, part 1: Keyes, 8.

Grand Tower formation of Illinois: Savage, 2, 8.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

GRASSY CREEK SHALE.
Geology of Missouri: Branson, 8, 52.
Subsurface geology of northeast Missouri: Grohskopf, 3.
Carboniferous formations of the Ozark region: Keyes, 38.
Eral affiliations of Grassy black shale: Keyes, 79A.
Early Mississippian formations in Missouri: Moore, R. C., 2.
Grassy Creek shale: Weller, J. M., 14.

GRAYDON SANDSTONE.
Graydon sandstone and its mineral waters: Babcock, 1.
Geology of Miller Co.: Ball, S. H., 1.
Geology of Missouri: Branson, 52.
Geology of the Fire Clay district of east central Missouri: McQueen, 16.
Geology of Morgan Co.: Marbut, 15.
Geology of Greene Co.: Shepard, E. M., 2, 8.
Geology of Moniteau Co.: Van Horn, F. B., 1.
Lead and zinc deposits of Missouri: Winslow, 14.

GULF SERIES.
Geology of Stoddard Co.: Farrar, 2.
Bauxitic clay in Stoddard Co.: Stewart, D. R., 1.

GUNTER SANDSTONE. Refer also to COLE CAMP and THIRD SANDSTONE.
Geology of Miller Co.: Ball, S. H., 1.
Geology of Missouri: Branson, 52.
Geology of the Eminence-Cardareva Quadrangles: Bridge, 6.
Sand and gravel resources of Missouri: Dake, 8.
Insoluble residues as a guide in stratigraphic studies: McQueen, 5.
Geology of Morgan Co.: Marbut, 15.

HALE SANDSTONE.
Fayetteville Folio: Adams, G. I., 3.
Geology of Missouri: Branson, 52.
Geology of the Cassville Quadrangle: Clark, E. L., 3A.
Eureka Springs-Harrison Folio: Purdue, 2.

HAMILTON GROUP. Now called CALLAWAY and SNYDER CREEK.
General geology of Missouri: Broadhead, 35; Branson, 52.
Lime and cement resources of Missouri: Buehler, 1.
Geology of Lincoln Co.: Potter, W. B., 1.
Geology of Pike Co.: Rowley, 24.
Second annual report Geological Survey of Missouri: Swallow, 2.

HANNIBAL SHALE. Refer also to VERMICULAR SANDSTONE and SHALE.
Lower Mississippian of Missouri: Branson, 38, 39, 52.
Subsurface geology of northeast Missouri: Grohskopf, 3.
Kansas Geological Society 9th annual field conference guidebook: Kansas Geological Society, 3A.
Principal Mississippian section: Keyes, 3.
Membership of Hannibal shales: Keyes, 130.
Structural reconnaissance of Mississippi Valley area: Krey, 1.
Early Mississippian formations of Missouri: Moore, R. C., 2.
Hannibal formation in Greene Co.: Park, 3.
Geology of Pike Co.: Rowley, 24.

HAPPY HOLLOW LIMESTONE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

HARTFORD LIMESTONE.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

HARVEYVILLE SHALE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

HASKELL LIMESTONE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

HEEBNER SHALE.
Pennsylvanian system in Nebraska: Condra, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

HENRIETTA FORMATION. Refer also to LEXINGTON GROUP.
Geology of Vernon Co.: Greene, F. C., 3.
Coal deposits of Missouri: Hinds, 4.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.

INDIAN CAVE SANDSTONE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

IOLA LIMESTONE. Refer also to PLATTSBURG GROUP.
Geology of the Blue Springs gas field: Bartle, 1.
Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

IOWA POINT SHALE.
Pennsylvanian system in Nebraska: Condra, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

IRON MOUNTAIN CONGLOMERATE.
Lead and zinc deposits of Missouri: Winslow, 14, 20.

ISLAND CREEK SHALE.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

JACKSON PARK SHALE.
Kansas Geological Society 6th annual field conference guidebook: Kansas Geological Society, 2.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

JEFFERSON CITY FORMATION. Refer also to SECOND MAGNESIAN.
Geology of Miller Co.: Ball, S. H., 1.
Geology of Missouri: Branson, 52.
Geology of Eminence-Cardareva Quadrangles: Bridge, 6.
Lower Ordovician Stratigraphy of Ozarks: Cullison, 5.
Revision of Jefferson City formation in Rolla Quadrangle: Cullison, 1.
Sandstone members of Jefferson City formation: Grawe, 3.
Subsurface geology of northeastern Missouri: Grohskopf, 3.
Geology of the Rolla Quadrangle: Lee, W., 2.
Insoluble residues as a guide in stratigraphic studies: McQueen, 5.
Geology of Morgan Co.: Marbut, 15.
Revision of the Paleozoic systems: Ulrich, 21.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Lead and zinc deposits of Missouri: Winslow, 14.

JIM CREEK LIMESTONE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

JOACHIM FORMATION. Refer also to FIRST MAGNESIAN.
Copper deposits of Missouri: Bain, 13.
Geology of Missouri: Branson, 52.
Quarrying industry of Missouri: Buckley, 5.
Subsurface geology of northeastern Missouri: Grohskopf, 3.
Structural reconnaissance of Mississippi Valley area: Krey, 1.
Geology of the Fire Clay districts of east central Missouri: McQueen, 16.
Geology of Moniteau Co.: Van Horn, F. B., 1.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.
Lead and zinc deposits of Missouri: Winslow, 14.

JONES POINT SHALE.
Pennsylvanian system in Nebraska: Condra, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

JORDAN COAL HORIZON.
Geology of the Calhoun Sheet: Marbut, 4.
Geology of the Clinton Sheet: Marbut, 5.

KANSAS CITY FORMATION.
Pennsylvanian system in Nebraska: Condra, 1.
Coal deposits of Missouri: Hinds, 4.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Leavenworth-Smithville Folio: Hinds, 6.
Geology of Jackson Co.: McCourt, 1.
Occurrences of oil and gas in Missouri: Wilson, M. E., 2.

KNOBTOWN SANDSTONE.

Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Oil and gas pools in western Missouri: Greene, F. C., 4.

LABETTE SHALE.

Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Traverse of upper Des Moines and lower Missouri series: Cline, 4.
Oil and gas pools of western Missouri: Greene, F. C., 4.
Special report on coal: Haworth, 13A.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

LA BIRDIE LIMESTONE.

Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.

LADORE SHALE.

Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

LAFAYETTE GRAVEL.

Geology and bleaching clays of southeastern Missouri: Farrar, 2, 3.
Geology of Morgan Co.: Marbut, 15.
Geology of the St. Louis Quadrangle: Fenneman, 4.
Eureka Springs-Harrison Folio: Purdue, 2.
Cobble of bauxite in the Lafayette gravel: Robertson, P., 8.
Occurrene of oil and gas in Missouri: Wilson, M. E., 2.

LAGONDA SANDSTONE and SHALE

Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Traverse of upper Des Moines and lower Missouri series: Cline, 4.
Report on the Bevier Sheet: Gordon, 3.
Geology of Vernon Co.: Greene, F. C., 3.
Geology of northwestern Missouri: McQueen, 12.

LAMOTTE SANDSTONE. Refer also to POTSDAM and PRISMATIC.

Geology of Missouri: Branson, 52.
Geology of the disseminated lead deposits of St. Francois and Washington Cos.: Buckley, 22.
Sand and gravel resources of Missouri: Dake, 8.
Geology of the Potosi-Edgehill Quadrangles: Dake, 15.
Subsurface geology of northeastern Missouri: Grohskopf, 3.
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Nomenclature of the Cambrian formations of the St. Francois mountains: Keyes, 52.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Lead and zinc deposits of Missouri: Winslow, 14, 20.

LANE SHALE.

Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of Jackson Co.: McCourt, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

LANSING FORMATION. Refer also to PLATTSBURG GROUP.

Pennsylvanian system in Nebraska: Condra, 1.
Coal deposits of Missouri: Hinds, 4.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Leavenworth-Smithville Folio: Hinds, 6.
Geology of Jackson Co.: McCourt, 1.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

LANSING GROUP.

Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

MUNCIE CREEK SHALE.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

NIAGARA LIMESTONE. Now called BAINBRIDGE.
General geology of Missouri: Broadhead, 35.
Geology of Pike Co.: Rowley, 24.
Geology of southern Calhoun Co., Illinois: Weller, S., 15A.

NODAWAY COAL HORIZON.
Coal deposits of Missouri: Hinds, 4.

NOEL SHALE. Refer also to CHATTANOOGA and EUREKA.
Geology of Missouri: Branson, 52.
Geology of the Cassville Quadrangle: Clark, E. L., 3A.
Fayetteville Folio: Purdue, 2.

NOIX OOLITE.
Geology of Missouri: Branson, 8, 52.
Carboniferous formations of the Ozark region: Keyes, 38.
Affinities of the Alexandrian series: Keyes, 73A.
Structural reconnaissance of the Mississippi Valley area: Krey, 1.
Alexandrian series in Missouri and Illinois: Savage, T. E., 3.
Revision of the Paleozoic systems: Ulrich, 21.

NORTHVIEW SHALE.
Lower Mississippian of Missouri: Branson, 38, 39, 52.
The Northview formation: Gardner, 1.
Early Mississippian formations in Missouri: Moore, R. C., 2.
Correlation of the Kinderhook formations of southwestern Missouri: Weller, S., 11.

NOWATA SHALE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

NYMAN COAL HORIZON.
Coal deposits of Missouri: Hinds, 4.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

OLATHE LIMESTONE.
Geology of Missouri: Branson, 52.
Oil and gas resources of Cass and Jackson Cos.: Clair, J., 3.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Geology of Johnson and Miami Cos., Kansas: Newell, 1.

ONONDAGA LIMESTONE. Now called COOPER.
General geology of Missouri: Broadhead, 35, Branson, 52.
Geology of Lincoln Co.: Potter, W. B., 1.
Second annual report Geological Survey of Missouri: Swallow, 2.

ORCHARD CREEK SHALE.
Geology of Missouri: Branson, 52.
Ordovician and Silurian formations in Alexander Co., Illinois: Savage, T. E., 1.
Alexandrian rocks of northeastern Illinois and eastern Wisconsin: Savage, T. E., 2A.
Thebes sandstone and Orchard Creek shale and their faunas: Savage, T. E., 7.

ORDOVICIAN SYSTEM.
Middle Ordovician section, east central Missouri: Bridge, 1.
Stratigraphy of some lower Ordovician formations of the Ozark uplift: Cullison, 5.
Ordovician outcrop in Saline Co.: Grohskopf, 4.
Ordovician system of upper Mississippi Valley: Kay, G. M., 3.
Mid-Ordovicic nomenclature: Keyes, 85.
Magnesian series of Ozark uplift, 1893: Nason, 3.
Revision of the Paleozoic system, Ordovician: Ulrich, 26.
Ordovician-Silurian boundary: Ulrich, 28.
Correlation of early Paleozoic: Ulrich, 33, 35.

OREAD LIMESTONE.
Pennsylvanian system in Nebraska: Condra, 1.
Pennsylvanian stratigraphy of Missouri: Hinds, 5.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

ORISKANY SANDSTONE. Now called LITTLE SALINE.
General geology of Missouri: Broadhead, 35.

ROCK LAKE SHALE.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

ROUBIDOUX FORMATION. Refer also to BOLIN CREEK, MOREAU, ST. ELIZABETH and SECOND SANDSTONE.
Geology of Missouri: Branson, 52.
Geology of the Eminence-Cardareva Quadrangles: Bridge, 6.
Heavy minerals in the Roubidoux and other sandstones of the Ozark region: Cordry, 1.
Sand and gravel resources of Missouri: Dake, 8.
Geology of the Potosi-Edgehill Quadrangles: Dake, 15.
Subsurface geology of northeastern Missouri: Grohskopf, 3.
Geology of the Rolla Quadrangle: Lee, W., 2.
Insoluble residues as a guide in stratigraphic studies: McQueen, 5.
Geology of Morgan Co.: Marbut, 15.
Report on iron ores: Nason, 2.
Roubidoux near Rolla: Schultz, J. E., 1.
Revision of the Paleozoic systems: Ulrich, 21.
Geology of Ste. Genevieve Co.: Weller, S., 27.
Occurrence of oil and gas in Missouri: Wilson, M. E., 2.

RULO LIMESTONE.
Pennsylvanian system in Nebraska: Condra, 1.
Geology of northwestern Missouri: McQueen, 12.
Pennsylvanian system in Kansas: Moore, R. C., 3A.

SAC LIMESTONE. Now called COMPTON.
Geology of Greene Co.: Shepard, E. M., 2.

SACCHAROIDAL SANDSTONE. Now called ST. PETER.
The saccharoidal sandstone: Broadhead, 139.
Geology of Lincoln Co.: Potter, W. B., 1.
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ST. JOSEPH LIMESTONE. Now called ELVINS and BONNETERRE.
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SNIABAR LIMESTONE.
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THIRD SANDSTONE. Now called GUNTER.
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MISSOURI, map showing location of coal, lead and zinc mines, marble and granite quarries, tripoli and fire clay mines, scale: 12 miles to 1 inch, 1894: Evans, C., 2.

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MISSOURI, sketch map showing limits of the drift and loess of, scale not given, 1896: Todd, 7.

MISSOURI, geological map showing the distribution and principal developments of the clay deposits of, scale: 18 miles to 1 inch, 1896: Wheeler, H. A., 7.

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MISSOURI, geological map showing the location of the principal stone quarries, scale: 18 miles to 1 inch, 1904: Buckley, 5.

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MISSOURI, anticline in, scale: approx. 40 miles to 1 inch, 1907: Marbut, C. F. in Williams, G. K., 4.

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MISSOURI, map showing commercial coal fields and mines, scale—36 miles to 1 inch, 1912: Hinds, 4.

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BOONE COUNTY, geological map of, scale: 2 miles to 1 inch, 1898: Broadhead, 126.

BUTLER COUNTY, map showing iron deposits of, scale: approx. 5½ miles to 1 inch, 1912: Crane, G. W., 1.

CALLAWAY AND MONTGOMERY COUNTIES, map of parts of, (outcrop of St. Peter Sandstone), scale: 2 miles to 1 inch, 1918: Dake, 8.

CAPE GIRARDEAU COUNTY, geological map of, scale: 3 miles to 1 inch, 1873: Shumard, 13.

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CASS AND JACKSON COUNTIES, map showing thickness of Kinderhook shale—St. Peter Sandstone interval and approximate line of St. Peter overlap, scale: 8 miles to 1 inch, 1943: Clair, 3.

CEDAR COUNTY, geological map of, scale: 3 miles to 1 inch 1874: Broadhead, 40.

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CRAWFORD COUNTY, map showing iron deposits of, scale: approx. 4 miles to 1 inch, 1912: Crane, G. W., 1.

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JASPER COUNTY, geological map of, scale: 4 miles to 1 inch, 1874: Broadhead, 41.

JEFFERSON COUNTY, geological map of, scale: 3 miles to 1 inch, 1873: Shumard, 13.

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MILLER COUNTY, geological map of, scale: 3 miles to 1 inch, 1873: Meek, 6.

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Central Missouri, map of lead and zinc districts of, scale: 10 miles to 1 inch, 1894: Winslow, 14.

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Southeast Missouri, map showing the distribution of quarries in the granite district of, scale: 6 miles to 1 inch, 1904: Buckley, 5.

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