BIBLIOGRAPHY AND INDEX

OF

NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY, AND MINERALOGY

FOR

THE YEAR 1898

BY

FRED BOUGHTON WEEKS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1899
CONTENTS.

Letter of transmittal ................................................................. 7
Introduction .................................................................................. 9
List of publications examined ....................................................... 11
Bibliography .................................................................................. 15
Classified key to the index ............................................................ 107
Index ............................................................................................... 113
LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY.
Washington, D. C., June 30, 1899.

SIR: I have the honor to transmit herewith the manuscript of a Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the Year 1898, and to request that it be published as a bulletin of the Survey.

Very respectfully,

F. B. WEEKS.

Hon. CHARLES D. WALCOTT,
Director United States Geological Survey.
INTRODUCTION.

The method of preparing and arranging the material of the Bibliography and Index for 1898 is similar to that adopted for the previous publications on this subject (Bulletins Nos. 130, 135, 146, 149, and 156). Several papers that should have been entered in the previous bulletins are here recorded, and the date of publication is given with each entry.

Bibliography.—The bibliography consists of full titles of separate papers, classified by authors, an abbreviated reference to the publication in which the paper is printed, and a brief summary of the contents, each paper being numbered for index reference. The extent of papers less than a single page in length is indicated as \( \frac{1}{4} \) p., 5 l. (lines).

Index.—The subject headings, their subdivision and arrangement, are shown in the Classified Key to the Index. They comprise geographic, geologic, mineralologic, paleontologic, and petrologic subdivisions. Under Economic Geology is given a list of the useful minerals and ores described in publications examined; under Mineralogy, a list of minerals described in such publications; under Paleontology, a list of genera and species of fossils therein described, and under Petrology, a list of rocks described, reference being made in each case, by author's name and number of article in the Bibliography, to the paper in which the fossil, mineral, or rock is described.

The Index has been added to by a list of chemical analyses of rocks and minerals and a list of names of geologic formations described in the publications examined.
LIST OF PUBLICATIONS EXAMINED.


American Geologist, Vols. XXI-XXII, 1898. Minneapolis, Minn.

American Institute of Mining Engineers: Transactions, Vol. XXVII, 1898. New York, N. Y.


Appalachia, Vol. VIII, No. 4, 1898. Buffalo, N. Y.


LIST OF PUBLICATIONS EXAMINED.

Hawaiian Experiment Station, Lavas and soils of the Hawaiian Islands, 1898. Honolulu.
Illinois, State Laboratory of Natural History: Bulletin; Vol. V, Articles 4-6, 1898. Peoria, Ill.
Indiana Academy of Science: Proceedings for 1896 and 1897. Indianapolis, Ind.
Indiana, Department of Geology and Natural Resources, 22d Annual Report, 1898. Indianapolis, Ind.
Iowa State University, Laboratories of Natural History: Bulletin, Vol. IV, No. 2, 1897, No. 3, 1898. Iowa City, Iowa.
Leland Stanford University, Contributions to Biology from Hopkins Seaside Laboratory, XIV, 1898. Palo Alto, Cal.
LIST OF PUBLICATIONS EXAMINED.

Maryland Academy of Sciences, Transactions, pp. 395-400, 1898. Baltimore, Md.
Mexico, Instituto Geológico, Bulletin, Nos. 10-11, 1898. City of Mexico.
Neues Jahrbuch für Mineralogie, Geologie, und Paleontologie: 1898, Bander I-II (except abstracts), 1898. Stuttgart, Germany.
New York State Engineer and Surveyor, Report for 1896. 1897. New York, N. Y.
Oberlin College, Laboratories: Bulletin, Nos. 7-8, 1897; No. 9, 1898. Oberlin, Ohio.
Palaiontologischen Institutes der Universität Wien, Mittheilungen, Band XI, Heft 4, 1898. Leipzig and Wien.
Paleontographica, Band XLII, 1895; Band XLIII, 1896; Band XLIV, 1897; Band XLV, Lebenszeit I, 1898. Stuttgart, Germany.
Popular Science Monthly, Vols. LII, Nos. 3-6; LIII and LIV, Nos. 1-2, 1898. New York, N. Y.
Royal Irish Academy: Proceedings, Vol. IV, No. 4, 1897; No. 5 and Vol. V, No. 1, 1898; Transactions, Vol. XXXI, part 1, 1896; parts 2-4, 1897; parts 5-6, 1898. Dublin, Ireland.
School of Mines Quarterly, Vol. XVIII, 1897; Vols. XIX and XX, No. 1, 1898. New York, N. Y.
Scientific American, Vols. LXXVIII-LXXIX, 1898. New York, N. Y.
LIST OF PUBLICATIONS EXAMINED.

Scientific American Supplement, Vols. XLV-XLVI, 1898. New York, N. Y.
Smithsonian Institution: Annual Report for 1897; Miscellaneous Collections, Vols. XXXVII-XXXVIII and Nos. 1081, 1090, 1125, 1126, 1170. Washington, D. C.
The Mineral Industry for 1897, 1898. New York, N. Y.
Zeitschrift fur Praktische Geologie, 1898, Hefte 1-12, 1898. Berlin, Germany.
BIBLIOGRAPHY.

A.

1 Abbe (Cleveland, jr.). An episode during the terrace cutting of the Potomac [Maryland].
   Johns Hopkins Univ., Circ., vol. xviii, pp. 16-17, 1898.
   Describes occurrence of gravel and clay within a cave, and their relation to the terraces of the Potomac River.

2 Adams (Frank D.). On the structure and origin of certain rocks of the Laurentian system.
   Describes the origin and structure of certain igneous and altered sedimentary rocks.

3 Nodular granite from Pine Lake [Ontario].
   Geol. Soc. Am., Bull., vol. ix, pp. 163-172, pl. 11, figs. 1-2, 1898;
   Describes the microscopic and chemical characters of the granite and nodules and discusses the origin of the nodular structure.

4 Notes on the geology of Montreal and vicinity.

5 The deformation of rocks under pressure.

   Describes the methods employed and the results.

7 Adams (George I.). The Upper Cretaceous of Kansas. A historical review.
   Gives a summary of the views of various writers on the Cretaceous of Kansas and a general section.

8 A geological map of Logan and Gove counties [Kansas].
   Shows the distribution of the Cretaceous and Tertiary rocks and gives a brief account of their occurrence.
9 Adams (George I.). Physiography of southeastern Kansas.
Describes the general physiography of the Great Plains, the geologic structure of Kansas, and the physiographic features of the southeastern portion of the State.

10 — A geological reconnaissance in Grant, Garfield, and Woods counties, Oklahoma.
Describes the general geologic and geographic features of the region.

11 Aguilar y Santillan (Rafael). Bibliografía geológica y minera de la República Mexicana.

11a Aguilera (José G.). Catálogo sistemático geográfico de las especies mineralógicos de la República Mexicana.
Inst. Geol. de Mexico, Bull. No. 11, 157 pp., 1898.


13 Ami (Henry M.). Note on the physiography and geology of Kings County, Nova Scotia.
Ottawa Nat., vol. xii, pp. 149-150, 1898.
Gives brief notes on the geology of the county.

14 — The mastodon in western Ontario.

15 Andrews (C. I.). The volcanic rock of Alum Hill, Boulder County [Colorado].
Describes the megascopic, microscopic, and chemical characters of two varieties of eruptive rock.

16 Ashley (George H.). Note on an area of compressed structure in western Indiana.
Describes occurrence in the Indiana coal field.

17 — Note on fault structure in Indiana.
Ind. Acad. Sci., Proc. 1897, pp. 244-250, pls. i-ii, 1898.
Describes faults in the Coal Measures of Indiana.

18 — Blatchley (W. S.) and. Geological scale of Indiana.
See Blatchley (W. S.) and Ashley (G. H.), No. 92.

19 Austin (W. L.). Copper deposits of Mora County, New Mexico.
Describes the occurrence and origin of the deposits.


**B.**


28 — See **Clark** (W. B.), No. 152.


Bull. 162 — 2
31 Bailey (L. W.) The Bay of Fundy trough in American geological history. 
Discuss the geologic history of the region.

32 Some typical sections in southwestern Nova Scotia. 
Contains brief notes on the stratigraphy and structure of the region.

33 Bain (Harry Foster). Geology of Polk County [Iowa]. 
Iowa Geol. Surv., vol. vii, pp. 265-412, pls. vii-ix, figs. 38-66, with geologic map, 1897. 
Describes the physiography, the occurrence, and character of the Carboniferous and Pleistocene strata, and the occurrence of coal, clay, and road materials.

34 Geology of Guthrie County [Iowa]. 
Iowa Geol. Surv., vol. vii, pp. 415-487, figs. 67-71, with geologic map, 1897. 
Describes the physiographic features, the occurrence, and character of the Carboniferous, Cretaceous, and Pleistocene formations, and the occurrence of coal and clays.

35 Preliminary outline map of the drift sheets of Iowa. 
Iowa Geol. Surv., vol. viii, pl. iii, 1898.

36 Geology of Decatur County [Iowa]. 
Iowa Geol. Surv., vol. viii, pp. 258-309, pls. xxi-xxiv, figs. 9-10, with geologic map, 1898. 
Describes the physiographic features, the occurrence, and character of the Carboniferous and Pleistocene formations, and the occurrence of coal, clay, and building stone.

37 Geology of Plymouth County [Iowa]. 
Iowa Geol. Surv., vol. viii, pp. 318-366, pls. xxv-xxix, fig. 13, with geologic map, 1898. 
Describes the physiographic and stratigraphic features, the occurrence, and character of the Cretaceous and Pleistocene formations, and the occurrence of clay, cement, and coal.

38 Properties and tests of Iowa building stones. 
Describes the essential properties of building stones and the character of some material from Iowa.

39 The Bethany limestone, at Bethany, Missouri. 
Describes the character and occurrence of the series at the locality and in Iowa. Gives lists of fossils determined and the author's classification.

40 The Aftonian and pre-Kansan deposits in southwestern Iowa. 
Describes the evidence of two drift sheets and its bearing on the evidence of a pre-Kansan drift.
   Jour of Geol., vol. vi, pp. 542-544, 1898.

42 —— [Review of "Clay deposits and clay industry in North Carolina," by Heinrich Ries.]
   Jour. of Geol., vol. vi, pp. 545-547, 1898.

   Jour. of Geol., vol. vi, pp. 763-764, 1898.

44 —— The Bonanza Arkansas coal mines.
   Describes the occurrence and chemical character of the coal in Sebastian County, Arkansas.

45 —— and Leonard (A. G.). The Middle Coal Measures of the western interior coal fields.
   Describes the conditions under which the Des Moines and Missourian series were laid down, gives a section of the beds in central Iowa, and discusses the classification and correlation of portions of the Coal Measures.

46 Ball (T. H.). The Lake Michigan and Mississippi Valley watershed.
   Traces the course of the watershed in northern Indiana.

47 —— Some notice of streams, wells, and sand ridges in Lake County, Indiana.
   Ind. Acad. Sci., Proc., 1896, pp. 73-75, 1897.
   Describes certain physical features of the region.

48 Ballou (William H.). The serpentlike sea saurians.
   Describes the distribution and gives illustrations of saurians of recent and geologic time.

49 Barbour (Erwin Hinckley). Notes on the ash beds of Nebraska and the Great Plains.
   The Mineral Industry for 1897, pp. 22-25, 5 figs., 1898.
   Describes the character and occurrence of the volcanic ash beds.

50 Barlow (A. E.) and Ferrier (W. F.). On the relations and structure of certain granites and associated arkoses of Lake Temiscaming, Canada.
   Describes the microscopic characters and relations of the rocks.
   Describes the topographic features of eastern Oregon and the occurrence of gold.

52 Bascom (Florence). [Review of "Maryland Geological Survey, vol. i, 1897."]

53 — See Diller (J. S.), No. 234.

   Nat. Sci., vol. xii, pp. 337-345, 1898.

55 Bayley (W. S.). See Diller (J. S.), No. 234.

56 Becker (George F.). Reconnaissance of the gold fields of southern Alaska, with some notes on general geology.
   Includes notes on some igneous rocks and on the glacial features and volcanic phenomena of the region. Describes the occurrence and character of the auriferous deposits and veins.

57 — The Witwatersrand banket, with notes on other gold-bearing pudding stones.
   Includes notes on auriferous conglomerates occurring in the United States.

58 — Auriferous conglomerates of the Transvaal.
   In describing the character of the conglomerates and the origin of gold, refers to the river gravels and beach sands of California.

59 — On the determination of plagioclase feldspars in rock sections.
   Reviews Michel-Levy's method of determining plagioclase feldspars.

   Discusses the origin, growth, development, and significance of spines. Includes a bibliography of the subject.

61 Beede (J. W.). New corals from the Kansas Carboniferous.
   Describes four new species.

62 — Variations of external appearance and internal characters of Spirifer cameratus Morton.
   Kan. Univ. Quart., vol. vii, pp. 103-105, pl. vi, fig. 1-3, 1898.
63 Beede (J. W.). Notes on Campophyllum torquium Owen, and a new variety of Monopteria gibbosa Meek and Worthen. 

64 — Preliminary notice on the correlation of the Meek and Marcou section at Nebraska City, Nebraska, with Kansas Coal Measures. 
Discusses the evidence for the correlation of the Nebraska City beds with Coal Measures at Topeka, Kansas.

65 — The stratigraphy of Shawnee County [Kansas]. 
Names and describes a number of subdivisions of the Coal Measures. Gives a list of fossils collected.

66 — The McPherson Equus beds. 
Describes the topography of a part of central Kansas and the character, occurrence, and origin of the Equus beds.

67 — Notes on Kansas physiography. 
Describes the physiographic features as determined by the geologic structure, rocks, and climate.

Describes the occurrence and character of the granite, Laurentian, Huronian, and Silurian rocks and glacial phenomena.

69 — On the occurrence of mammoth and mastodon remains around Hudson Bay. 
Describes the occurrence, migration, disappearance of the mammoth and mastodon, the character of the Pleistocene deposits southwest of James Bay, and the discovery of mastodon bones in other parts of Canada.


71 Benedict (A. C.). The Bayport, Michigan, quarries. 
Describes the character and occurrence of the St. Louis limestone at the locality, and its value as a building stone and for road material.

72 Bennett (L. F.). Four comparative cross sections of the Knobstone group of Indiana. 
Describes the character of the formation and compares the sections as drawn.
73 Berkey (Charles P.). Geology of the St. Croix Dalles. II [Wisconsin]. Am. Geol., vol. xxi, pp. 139-155, pls. xii-xiii, 1898. Describes the igneous rocks and minerals and presents a geologic map of the region.


76 Beyer (Samuel Walker). Geology of Marshall County [Iowa]. Iowa Geol. Surv., vol. vii, pp. 199-262, pls. v-vi, figs. 25-37, with geologic map, 1897. Describes the physiographic and drainage features, the occurrence and character of the Carboniferous subdivisions, and the occurrence of building stones and clay.


83 **Blake** (William P.). Remains of a species of *bos* in the Quaternary of Arizona.

Am. Geol., vol. xxii, pp. 65-72, 1898.

Describes horn cores and reviews the literature describing similar material.

84 — Bison *latifrons* and *Bos arizonica*.


Refers to remains recently described by Dr. Allen.

85 — Native sodium carbonate.

Eng. and Mg. Jour., vol. lxv, p. 188 († p.), 1898.

Describes occurrence of soda in northern Mexico.

86 — Wolframite in Arizona.


Contains brief notes on occurrence in Cochise County.

87 **Blandy** (John F.). Mining in Yavapai County, Arizona.


Describes the general geology of the region and the occurrence of precious metals.

88 **Blatchley** (W. S.). The geology of Lake and Porter counties, Indiana.


Describes the physiography, the Devonian and Silurian rocks, and the glacial and recent geologic features of the region. Gives sections of artesian wells.

89 — The clays and clay industries of northwestern Indiana.


Describes the character, origin, varieties and properties of clays and the clays and clay industries of the region.

90 — The petroleum industry in Indiana in 1897.


Describes the mode of formation of oil in the Trenton limestone in Indiana.

91 — See **Oliphant** (F. H.), No. 580.

92 — and **Ashley** (George H.). Geological scale of Indiana.


Gives a brief description of each of the formations occurring in the State.

93 **Boss** (O. M.). Some dike features of the Gogebic iron range [Michigan-Wisconsin].


Gives local details regarding the dikes of the region.
94 Bownocker (J. A.). The paleontology and stratigraphy of the Corniferous rocks of Ohio.
   Describes the stratigraphy and gives lists of fossils found at various localities.

95 Boyer (Charles S.). See Woolman (L.), No. 934.

96 Branner (John C.). The cement materials of southwest Arkansas.
   Describes the occurrence of the chalk beds and gives chemical analyses of the material.

97 — On the origin of novaculites and related rocks.
   Jour. of Geol., vol. vi, pp. 368-371, 1898.
   Gives a summary of the views of various authors as to the origin of these rocks, with a brief statement of the writer's conclusions.

98 — Geology and its relations to topography.
   Am. Soc. Civil Engrs., Trans., vol. xxxix, pp. 53-78, 94-95, 16 figs., 1898.
   Describes the internal changes which rocks undergo, the character and mode of operation of the destructive agencies, and the resulting topographic forms.

   Contains brief notes on the occurrence of gold and copper in the region.

100 — The Sandon district, British Columbia.
   Describes the occurrence of the silver-lead ores of the region.

101 — Rossland, British Columbia.
   Includes brief notes on the geologic occurrence of the ore bodies.

102 — Prospecting on the upper Lillooet, British Columbia.
   Includes notes on the general geology of the region.

103 — Pemberton meadows and the Blackwater, British Columbia.
   Describes the general geologic features of the region.

104 — Lillooet River and the Squamish trail, British Columbia.
   Eng. and Mg. Jour., vol. lxvi, p. 515, 1 fig., 1898.
   Gives notes on the general geology of the region and the occurrence of gold.

105 Brigham (Albert Perry). Topography and glacial deposits of Mohawk Valley [New York].
   Describes the pre-Glacial drainage and drift deposits of the region.
106 Brigham (Albert Perry). Note on trellised drainage in the Adirondacks.
Am. Geol., vol. xxi, pp 219-222, pl. xv, 1898.
Discuss the drainage of a portion of the Adirondack region.

107 Broadhead (Garland C.). Geology of Boone County [Missouri].
Mo. Geol. Surv., vol. xii, Pt. III, pp. 375-388, pls. xii-xiii, 1898.
Describes the physiographic features, the character and occurrence of the Ozark series, Osage series, and Keokuk group, and includes a geologic map of the area.

108 —— The Ozark uplift and growth of the Missouri Paleozoic.
Mo. Geol. Surv., vol. xii, Pt. III, pp. 391-409, 1898.
Describes the general character of the Ozark uplift and the geologic history of the region.

109 —— Maj. Frederick Hawn.
Am. Geol., vol. xxi, pp. 267-269, pl. xvi, 1898.
Gives a sketch of his life and a list of published papers.

110 Brooks (Alfred H.), Wolff (J. E.) and. The age of the Franklin white limestone of Sussex County, New Jersey.
See Wolff (J. E.) and Brooks (A. H.), No. 931.

111 Brown (Lucius P.). The phosphate-rock deposits of Tennessee during 1897.
Describes the character and origin of the Tennessee phosphate deposits.

School of Mines Quart., vol. xix, pp. 90-93, 4 figs., 1897.
Describes the occurrence of the dike rock and its mineralization.

113 Browne (Ross E.). The mother lode of California.
Describes the characteristic features of the mother lode and the occurrence of gold.

Review by J. P. Iddings, Jour. of Geol., vol. vi, pp. 757-758, 1898.

115 Bryson (John). Drift formations of Long Island [New York].
Am. Geol., vol. xxii, pp. 245-247, 1898.
Describes certain features of the terminal moraine.

116 Butts (Edward). Description of some new species of crinoids from the Upper Coal Measures of the Carboniferous age at Kansas City, Missouri.
Describes two new species.
117 **Cabrera** (Raimundo). Mineral resources of Cuba. Translated from the Spanish, by Louis Edward Levy.
Describes occurrence of asphaltum, copper, iron, manganese, and gold.

118 **Call** (R. Ellsworth). The hydrographic basins of Indiana and their molluscan fauna.
Describes the drainage systems of Indiana.

119 **Calvin** (Samuel). Fifth Annual Report of the State Geologist [Iowa].
Iowa Geol. Surv., vol. vii, pp. 11-27, pl. i, 1897.
Gives a review of the work of the members of the survey and includes a geologic map of the State.

120 — Geology of Johnson County [Iowa].
Iowa Geol. Surv., vol. vii, pp. 35-104, pl. iii, figs. 1-9, with geologic map, 1897.
Describes the physiography, drainage systems, the character and occurrence of the Silurian, Devonian, Carboniferous, and Pleistocene formations, and the occurrence of building stones.

121 — Geology of Cerro Gordo County [Iowa].
Iowa Geol. Surv., vol. vii, pp. 119-195, figs. 10-24, with geologic map, 1897.
Describes the physiographic and drainage features, the occurrence and character of the Devonian, Carboniferous, and Pleistocene formations, and the occurrence of building stones and clays.

122 — Sixth Annual Report of the State Geologist [Iowa].
Iowa Geol. Surv., vol. viii, pp. 11-23, pl. ii, 1898.
Gives a sketch of the geologic work of the survey during 1897 and a geologic map of the State.

123 — Geology of Delaware County [Iowa].
Iowa Geol. Surv., vol. viii, pp. 121-192, pls. vii-xiii, with geologic map, 1898.
Describes the physiography, the occurrence and character of the Ordovician, Silurian, Devonian, Cretaceous, and Pleistocene formations, and the occurrence of building stones, clay, and road material.

124 — Geology of Buchanan County [Iowa].
Iowa Geol. Surv., vol. viii, pp. 203-253, pls. xiv-xx, with geologic map, 1898.
Describes the physiographic features and the occurrence and character of the Silurian, Devonian, and Pleistocene formations, and the occurrence of building stones.

125 — [Contribution to “A symposium of the classification and nomenclature of geologic time divisions”].
Jour. of Geol., vol. vi, pp. 352-355, 1898.
Reviews the literature on the subject and describes the character and occurrence of the Buchanan gravels.

Describes the physiography of the Appalachian province and of the Tazewell quadrangle, the geologic structure of the region, the occurrence and character of Cambrian, Ordovician, Silurian, Devonian, and Carboniferous rocks, and the occurrence and chemical character of the coal. Includes topographic and geologic maps and columnar section.

Describes the physiographic features of the Ohio basin and Richmond quadrangle, the geologic history and structure, and the character and occurrence of Silurian, Devonian, Carboniferous, and Tertiary formations. Includes topographic and geologic maps and structure sections.

Describes the physiographic features, geologic history, character and occurrence of the Siluro-Devonian, Devonian, and Carboniferous rocks, the structural relations and the occurrence of coal. Accompanied by topographic and geologic maps and columnar sections.

Describes the results of investigations of the earthquake shocks in May, 1897.

131 Canby (H. S.). See Parker (E. W.) No. 599.

Includes account of the mining operations and quotations from descriptions of the geologic features previously published by members of the Canadian Geological Survey.

Describes the classification and general changes in the anatomy of fishes resulting in the modern type, and a brief summary of the characters of different forms.

134 — The development and geological relations of the vertebrates. II. Amphibia. Jour. of Geol., vol. vi, pp. 500-523, 5 figs., 1898.
Discusses the origin and structure of the Amphibia and describes the general characters of various groups.
135 Case (E. C.). The development and geological relations of the vertebrates III. Reptilia.
    Jour. of Geol., vol. vi, pp. 517-523, 622-646, 711-735, 1898.
    Describes the general characters of the various forms.

136 — The development and geological relations of the vertebrates. IV. Aves. V. Mammalia.
    Jour. of Geol., vol. vi, pp. 816-839, 1898.

137 — Toxochelys.
    Describes several species, including a new one.

138 — The significance of certain changes in the temporal region of the primitive Reptilia.

139 Catlett (Charles). See Birkinbine (John), No. 79.

140 Chalmers (Robert). The preglacial decay of rocks in eastern Canada.
    Describes beds of decayed rock beneath the glacial covering.

141 — The preglacial decay of rocks in eastern Canada.
    Describes the physiographic features of the region, the distribution of the decayed rock materials, and the causes of the decomposition of the rocks.

142 — The gold-bearing deposits of the eastern townships of Quebec.
    Describes the occurrence and origin of the gold deposits of the region.

    Jour. of Geol., vol. vi, pp. 433-436, 1898.

144 — [Review of “Northward over the great ice. A narrative of life and work along the shores and upon the interior ice cap of northern Greenland in the years 1886 and 1891-1897,” by Robert E. Peary.]
    Jour. of Geol., vol. vi, pp. 438-441, 1898.

145 — The ulterior basis of time divisions, and the classification of geologic history.
    Jour. of Geol., vol. vi, pp. 449-462, 3 figs., 1898.
    Discusses the evidences that the history of the earth can be classified into natural divisions by the recognition of its inherent periods.

146 — A systematic source of evolution of provincial faunas.
    Jour. of Geol., vol. vi, pp. 597-608, 1898.
    Discusses the characteristics of the movements of the earth crust and the relation and influence of the attitude of sea to land in the evolution of faunas.
147 Chamberlin (T. C.). The influence of great epochs of limestone formation upon the constitution of the atmosphere. Jour. of Geol., vol. vi, pp. 609-621, 1898.
Discusses the relation of carbon dioxide to geologic processes, and the changes that are effected in the atmosphere through the building up of great limestone formations.

Discusses the indications of glaciations during geologic time, and the theories as to the origin and development of the earth and of the atmosphere.


Describes its chemical and crystallographic character.

Discusses the origin of the mountain structures.

152 Clark (William Bullock). With the collaboration of R. M. Bagg and George B. Shattuck. Report upon the Upper Cretaceous formations [New Jersey].
Reviews the literature on the formation, describes the topographic features and the character and occurrence of the subdivisions of the Upper Cretaceous, and discusses their correlation.


154 Clarke (John M.). The geological conditions at the site of the proposed dam and storage reservoir of the Genesee River at Portage [New York].
Describes the character and occurrence of the Portage group, the topographic features of the region, and the erosion of the Portage group.

155 — The stratigraphic and faunal relations of the Oneonta sandstone and shales, the Ithaca and Portage groups in central New York.
Gives a historical sketch of these groups, a discussion of their stratigraphic and faunal relations, and two geologic maps.
156 Clarke (John M.). Notes on some crustaceans from the Chemung group of New York.
Describes Pephricaris horripilata n. sp., and Bronteus senescens Clarke.

Am. Geol., vol. xxii, pp. 217-228, 1898.
Describes the use of the microscope in the study of geologic phenomena.

158 — Glacial theories, cosmical and terrestrial.
Discusses various hypotheses.

159 Clements (J. Morgan). A study of some examples of rock variation.
Describes the microscopic and chemical characters of diorite, gabbros, and peridotites of Crystal Falls, Michigan, and discusses the relations of the rocks of the series.

Describes the occurrence and character of the clays of the State.

Discusses the classification of the series and describes the Huronian clastics, the relations of the Laurentian and Huronian, and the geologic history of the region.

162 — Glacial and interglacial deposits at Toronto [Canada.]
Describes glacial phenomena of the vicinity.

163 — Notes on the western Ontario gold fields.
Describes the occurrence and character of the gold-bearing deposits.

164 Cooper (A. S.). A bituminous rock deposit in Santa Barbara County, California.
Eng. and Mg. Jour., vol. lxvi, pp. 278-279, 4 figs., 1898.
Describes the geology of the region and the occurrence of the bituminous rock.

165 — Southern California petroleum.
Describes occurrence of petroleum in Santa Barbara County, California.

167 Crane (W. R.). Geography and detailed stratigraphy of the Kansas Coal Measures; description of mines, mining methods, and mining machinery; chemical and physical properties of Kansas coals; output and commerce; mining directory, and mining laws.

168 Crawford (J.). Recent severe seismic disturbances in Nicaragua.
Am. Geol., vol. xxii, pp. 56-58, 1898.
Describes earthquake shocks.

169 Crosby (W. O.). Geology: South shore [vicinity of Boston, Mass.].
Salem, Mass., 1898.
Describes the geologic features of the region and gives a list of papers on its geology.

170 — History of the Blue Hills complex [Massachusetts].
Describes the igneous and sedimentary rocks of the region.

171 — [Review of various geologic papers.]

172 Cross (Whitman). The geological versus the petrographical classification of igneous rocks.
Refers to the many broad classifications of rock masses necessary from a geologic standpoint, and concludes that most geologic criteria are not available for the construction of a systematic classification of rocks as objects—the petrographic scheme.

173 — Geology of the Cripple Creek gold mining district [Colorado].
See Bibliography and Index for 1896, No. 150.

174 — The San Miguel formation.
See Bibliography and Index for 1896, No. 152.

175 — See Day (W. C.), No. 227.

176 — See Diller (J. S.), No. 234.

177 Crump (H. M.). The clays and building stones of Kentucky.
Includes notes on their character and occurrence.
178 Culbertson (Glenn). Preliminary work for the approximate determination of the time since the retreat of the first great ice sheet.


Describes methods of work employed in Jefferson County, Indiana, for determining the time interval.

179 Cumings (Edgar R.), Prosser (Charles S.), and. Sections and thickness of the Lower Silurian formations on West Canada Creek and in the Mohawk Valley [New York].

See Prosser (C. S.), and Cumings (E. R.), No. 643.


Discusses the character and relations of the Texas Permian subdivisions, and describes recent observations on the Wichita division.

181 Cushing (H. P.). Syenite-porphyry dikes in the northern Adirondacks [New York].


Describes the occurrence and distribution of the dikes and the mineralogic and chemical composition of the dike rocks.

182 — Report on the geology of Clinton County [New York].


Describes the physiography, the general geologic relations, the character of the igneous rocks, and of the Cambrian, Silurian, and Pleistocene deposits, and the metamorphism of the pre-Cambrian rocks. Includes details of township geology.

D.

183 Dall (William Healey). Contributions to the Tertiary fauna of Florida, with especial reference to the Miocene silax beds of Tampa and the Pliocene beds of the Caloosahatchie River.


Includes descriptions of the families of the orders Prionodesmacea, Anomalodesmacea, Teleodesmacea, and Paleoconcha, and notes on nomenclature.

184 — Contributions to the Tertiary fauna of Florida, with especial reference to the silax beds of Tampa and the Pliocene beds of the Caloosahatchie River, including in many cases a complete revision of the generic groups treated of and their American Tertiary species.

Wagner Free Inst. Sci., Trans., vol. iii, Pt. IV, pp. 571-916, pls. xxiii-xxv, 1898
185 Dall (William Healey). Notes on the paleontological publications of Professor William Wagner.
Includes notes on species described by Professor Wagner and illustrations of a number of species.

186 — [Paleontology of the collections from Isthmus of Panama and Costa Rica].
Gives the author's conclusions regarding the different horizons from a study of materials collected by R. T. Hill.

187 — A table of the North American Tertiary horizons correlated with one another, and with those of western Europe, with annotations.
 Defines the main divisions of the Tertiary and includes note on the table.

188 — Synopsis of the recent and Tertiary Psammobiidae of North America.
Gives a list of the genera and species.

189 — A new subgenus of Coralliophaga.
Describes material from the Tertiary of Alabama.

190 — See Leidy (Joseph) No. 481.

John Wiley and Sons, New York, 1898.

Describes the faults of the region and the occurrence of the crystalline, Cambrian, and Ordovician rocks.

193 — Preliminary geological map of Albany County [New York].

194 — Underground waters of a portion of southeastern Nebraska.
U. S. Geol. Surv., Water Supply and Irrigation Papers, No. 12, 53 pp., pls. 1-xxi, figs. 1-14, 1898.
Describes the occurrence and character of the Carboniferous, Cretaceous, Tertiary, Pleistocene and Recent formations of the region, and the artesian wells and water supply.
Bull. 162—3
195 **Darton** (Nelson Horatio). Discovery of marine Cretaceous in boring at Norfolk, Virginia.
   Describes the materials from the borings and gives a list of the fossils.

196 — Geothermal data from deep artesian wells in the Dakotas.
   Presents data regarding the temperature of underground waters.

197 — Tertiary of South Dakota and Nebraska.
   Summary of paper read before the Geological Society of Washington.

   Describes the occurrence and character of the dikes and includes petrographic notes on the dike rocks.

199 **Davis** (William M.). The Triassic formation of Connecticut.
   Describes the deposition, character, and occurrence of the Triassic strata, the occurrence and character of the igneous rocks, and the deformation and denudation of the region.

200 — Physiography [portions of New England].
   Describes the physiographic features of the uplands of southern New England, the coastal plain of Maine, and the Meriden district of the Connecticut Valley. Gives a list of papers on the physiography of the region.

201 — [Review of "Topographic atlas of the United States—physiographic types," by Henry Gannett.]


203 — The grading of mountain slopes.

204 — [Review of "The physical geography of New York," by R. S. Tarr.]


207 —— [Review of "Great changes of level in Mexico and the interoceanic connections," by J. W. Spencer.]

208 —— [Review of "Mountain structures of Pennsylvania," by A. P. Chittenden.]

209 —— [Review of "Cote sans Dessein and Grand Tower," by C. F. Marbut.]

210 —— [Review of "Artesian well prospects in the Atlantic coastal plain region," by N. H. Darton.]

211 —— [Review of "Waterfall lakes in central New York," by E. C. Quereau.]

212 —— [Review of "A geological reconnaissance of the coal fields of the Indian Territory," by N. F. Drake.]

213 —— [Review of "Submerged valleys of the coast of California, U. S. A.," by George Davidson.]

214 —— [Review of "Water resources of Indiana and Ohio," by Frank Leverett.]


216 —— [Review of "Drift phenomena of Puget Sound," by Bailey Willis.]

217 —— [Review of "The physical geography of New Jersey," by R. D. Salisbury.]


220 Davis (William M.). [Review of "Late formations and great changes of level in Jamaica," by J. W. Spencer.]

221 — [Geology and its relations to topography.]
In discussion of paper by John C. Branner on the same subject.

222 Dawson (George M.). Summary report of the Geological Survey department for the year 1896 [Canada].
Gives a summary of the office and field work of the survey.

223 Dawson (J. William). On the genus Lepidophloios as illustrated by specimens from the coal formation of Nova Scotia and New Brunswick.
Describes L. acadianus and L. cliftonensis and discusses the relations with other species and the relations of Lepidophloios to certain other genera.

224 — Note on Lepidophloios cliftonensis.

Washington.
Am. Geol., vol. xxii, pp. 203–217, 4 figs., 1898.
Describes the physiography and development of the glacial drainage of the region and the occurrence of terraces and other glacial phenomena.

226 Day (David T.). Platinum.
Includes statistics of production and notes on occurrence in California and British Columbia.

Includes statistics of production, petrographic notes on granite from Barre, Vermont, by Whitman Cross; notes on character and occurrence of New England granites on California marbles, by E. W. Hilgard and George Madeira, and on West Virginia marbles by George C. Underwood; on the Bangor roofing slates of Pennsylvania, by Mansfield Merrim, and on sandstones from Niles, California, by E. W. Hilgard; a description of the Bedford oolitic limestone of Indiana, by C. E. Siebenthal, and chemical analyses of various building stones.

228 Dean (Bashford). Note on the ventral armoring of Dinichthys.

229 — On a new species of Edestus, E. lecontei, from Nevada.
Describes a new species and discusses its evidence of the primitive mode of spine formation within the phylum of fishes.

230 — See Newberry (J. S.), No. 573.
231 De Kalb (Courtenay). The onyx marbles.  
Stone, vol. xvii, pp. 397-405, 1898.  
Describes the occurrence of onyx marbles.

232 — See Parker (E. W.), No. 598.

233 Derby (Orville A.). On the origin of certain siliceous rocks.  
Jour. of Geol., vol. vi, 366-368, 1898.  
Discusses the origin of the Arkansas novaculite.

234 Diller (Joseph Silas). The educational series of rock specimens collected and distributed by the United States Geological Survey.  
U. S. Geol. Surv., Bull. No. 150, 400 pp., pls. i-xlvi, figs. 1-18, 1898.  
Describes the structural and physical features of rocks, the principal rock-making minerals, and the classification of rocks, with descriptions and chemical analyses of the educational series of rocks distributed by the U.S. Geological Survey.

235 — Roseburg folio, Oregon.  
Describes the topography, the occurrence of the Juratrias (†), Cretaceous, Tertiary, and igneous rocks, and the occurrence of gold, coal, cement, and building stone. Discusses the origin of the topography. Includes topographic and geologic maps.

236 D'Invilliers (E. V.).  
[In discussion of paper by R. Cabrera on "Mineral resources of Cuba"]

237 Douglas (James). The copper industry of Arizona.  
Describes the occurrence of copper in the mines of Arizona.

238 Douvillé (M. H.). Sur les couches à rudistes du Texas.  
Discusses the paleontologic evidence of the age of certain subdivisions of the Cretaceous of Texas.

239 Drake (Noah Fields). A geological reconnaissance of the coal fields of the Indian Territory.  
Describes the character, occurrence, distribution, and classification of the Coal Measures and the occurrence and character of the coals, and gives lists of fossils collected and description of three new species.

240 Drygalski (Erich von). Grönlands Eis und sein Vorland.  
Grønland-expedition der Gesellschaft für Erdkunde zu Berlin, Erster band, 556 pp., 44 pls., 54 figs. and 9 maps, 1897.  
Describes the physiographic features and glacial phenomena of portions of Greenland.
Describes occurrence in Carboniferous and Cretaceous strata.

242 Dunn (Russell L.). The country of the Klondike [Alaska].
Describes the glacial features of the region and the occurrence of the gold-bearing rocks and placers.

Describes the occurrence and chemical character of the material found in a rhyolite tuff from Oregon.

244 — A biotite-tinguaite dike from Manchester by the Sea, Essex County, Massachusetts.
Describes the occurrence of the dike and the microscopic and chemical characters of the dike rocks.

245 Earle (Charles). Relationship of the Chriacidæ to the primates.

246 Eastman (C. R.). Dentition of Devonian Ptyctodontidae.
Describes material from the State quarry beds of Iowa and discusses the relations of the Devonian fish fauna of Milwaukee, Wisconsin.

247 — Some new points in Dinichthyid osteology.

248 — On the occurrence of fossil fishes in the Devonian of Iowa.
Discusses the differences in the Devonian and Carboniferous fish faunas.

249 Eaton (G. F.). The prehistoric fauna of Block Island, as indicated by its ancient shell heaps.
Describes the general geologic and geographic features of the island and the occurrence and distribution of the shell heaps. Gives lists of the species found in them.

250 Elftman (A. H.). The geology of the Keweenawan area in north-eastern Minnesota.
Describes the glacial geology of the region and gives a historical review and description of the stratigraphy of the Keweenawan series and an account of the gabbro group.
Describes the relation of the preglacial and postglacial courses of the river.

252 Ellis (W. Hodgson) and Lawson (William). Chemical notes on the so-called Sudbury coal [Ontario].
Gives chemical analyses of the coals.

253 Ellis (R. W.). Notes on the Archean of eastern Canada.
Describes the occurrence and general character of the Laurentian and Huronian rocks.

254 --- Sands and clays of the Ottawa Basin [Canada].
Describes the physiography of the region, the character and distribution of the sands and clays and other glacial phenomena.

255 --- Problems in Quebec geology.
Describes the general results of the study of the geology of the Province.

256 --- Formations, faults, and folds of the Ottawa district [Canada].
Ottawa Nat., vol. xi, pp. 177-189, 1898.
Describes the occurrence, character, and structure of the Ordovician strata of the vicinity.

Describes the geologic features of the region.

258 --- Holyoke folio, Massachusetts-Connecticut.
Describes the topography, the character, and occurrence of the rocks of the Algonkian, Cambrian, Silurian, Devonian, Carboniferous, Jurassic-Triassic, and Pleistocene periods of western Massachusetts and of the Holyoke quadrangle. Describes the post-Glacial deposits and the occurrence of building stones and clay. Includes topographic and geologic maps of the Holyoke quadrangle.
259 Emmons (Samuel Franklin). Tenmile district special folio, Colorado.
	Describes the geographic features, occurrence and character of the Archean, Cambrian, Silurian, and Carboniferous strata, recent deposits, diorite-porphyries and rhyolites of the region. Discusses the structural relations and orographic disturbances and describes the geographic and geologic distribution, character, and occurrence of the silver-ore bodies. Accompanied by topographic and geologic maps and structure sections.

260 — Map of Alaska, showing known gold-bearing rocks, with descriptive text containing sketches of the geography, geology, and gold deposits and routes to the gold fields.
	U. S. Geol. Surv. (prepared in accordance with public resolution No. 3 of the Fifty-fifth Congress, second session, approved January 20, 1898), 44 pp. and geologic map, Washington, 1898.

260a — [Geology of the Aspen mining district, Colorado, Introduction.]
	Includes an account of the development of the Aspen mining district and the geologic investigations that have been made in the region.


F.

262 Fairbanks (Harold W.). Geology of a portion of the southern coast ranges.
	Jour. of Geol., vol. vi, pp. 551-576, 2 figs., 1898.
	Describes the topographic features, the character and occurrence of the Jurassic, Cretaceous, Tertiary, and Pleistocene deposits and of the igneous rocks. Discusses the structure and geologic history of the region.

263 — The great Sierra Nevada fault scarp.
	Discusses the history of the fault scarp along the eastern base of the Sierra Nevada range.

264 — Bituminous rock deposits in the vicinity of San Luis Obispo, California.
	Describes the occurrence of the bituminous rock and discusses its origin.

265 Fairchild (Herman LeRoy). Kettles in glacial lake deltas.
	Jour. of Geol., vol. vi, pp. 589-596, 3 figs., 1898.
	Describes occurrence at Potter, New York, and discusses its origin and formation.
266 Fairchild (Herman Le Roy). Glacial geology of western New York.


Describes the glacial deposits and phenomena of the State.

267 — Glacial geology in America.


Reviews the early literature on the glaciation of North America and the literature on the cause, time divisions, character, and origin of the various glacial phenomena.

268 — Basins in glacial lake deltas.


Describes occurrence near Potter, N. Y., and discusses its origin.

269 — Glacial waters in the Finger Lake region of New York.


270 Farrington (Oliver C.). Datolite from Guanajuato [Mexico].


Describes the crystallographic characters of the material.

271 Ferrier (W. F.), Barlow (A. E.) and. On the relations and structure of certain granites and associated arkoses of Lake Temiscaming, Canada.

See Barlow (A. E.) and Ferrier (W. F.), No. 50.

272 Fitzpatrick (T. J.). The drift section and the glacial striae in the vicinity of Lamoni, Iowa.


Describes occurrence of beds of driftwood and buried forest, and discusses its bearing on the question of the existence of a pre-Kansas stage.

273 Foerste (August F.). A report on the Niagara limestone quarries of Decatur, Franklin, and Fayette counties, with remarks on the geology of the Middle and Upper Silurian rocks of these and neighboring (Ripley, Jennings, Bartholomew, and Shelby) counties [Indiana].


Gives a general description of the Silurian strata and local details of the quarries.

274 Foote (H. W.), Penfield (S. L.) and. On clinohedrite, a new mineral from Franklin, N. J.

See Penfield (S. L.) and Foote (H. W.), No. 619.
275 **Foote** (Warren M.). Note on the occurrence of native lead with roeblingite, native copper, and other minerals at Franklin Furnace, New Jersey.

Describes the characters of the material.

276 **Fowke** (Gerard). Preglacial drainage in the vicinity of Cincinnati; its relation to the origin of the modern Ohio River, and its bearing upon the question of the southern limits of the ice sheet.

Describes the origin and geologic history of the Ohio River and the southern limit of the ice sheet.

277 **Frazer** (Persifor). Notes on the northern Black Hills of South Dakota.

Describes the general geology of the region and the occurrence of the gold ores. Includes a bibliography.

278 — Archean character of the nuclei of the Antilles.


279 **Frenzel** (A. B.). The turquoise deposit in Mohave County, Arizona.

Eng. and Mg. Jour., vol. lxvi, p. 697, 1 fig., 1898.
Describes the occurrence and chemical character of the material.

280 **Fuller** (Myron L.). Notes on a Carboniferous bowlder train in eastern Massachusetts.

Describes the character and distribution of the material and gives a bibliography of the subject.

281 — Champlain submergence in the Narragansett Bay region [Rhode Island].

Discusses theories as to the origin of certain glacial phenomena of the region.

282 — Crushed quartz and its source.

Stone, vol. xviii, pp. 1-4, 1 fig., 1898.
Describes the material from which the crushed quartz used in polishing, manufacture of glass, etc., is obtained.

283 **Gannett** (Henry). Physiographic types.

Describes various physiographic types in the United States, illustrated by topographic maps.
284 Gannett (Henry). A gazetteer of Kansas.

285 —— The aims and methods of cartography, with especial reference to the topographic maps now under construction in Maryland by the United States Geological Survey in cooperation with the Maryland Geological Survey.
Md. Geol. Surv., vol. ii, pp. 245-335, pls. xxxiii-xlili, figs. 20-26, 1898.

286 —— Lake Chelan [Washington].
Describes the physiographic features of the region.


Jour. of Geol., vol. vi, pp. 857-858, 1898.

289 Gilbert (Grove Karl). Recent earth movements in the Great Lakes region.
Describes the general features of the region, the methods of obtaining the data, and gives a discussion and summary of results.

290 —— [Contribution to “A symposium of the classification and nomenclature of geologic time divisions.”]

291 —— Bowlder pavement at Wilson, New York.
Jour. of Geol., vol. vi, pp. 711-775, pl. xiv, fig. 1, 1898.
Describes occurrence of bowlders in till, arranged horizontally and striated on the upper surfaces. Discusses mode of formation.

292 —— Joseph Francis James, 1857-1897.
Am. Geol., vol. xxi, pp. 1-11, pl. i, 1898.
Gives a sketch of his life and a list of his published papers.

293 —— A proposed addition to physiographic nomenclature.
Science, new ser., vol. vii, pp. 94-95, 1898.
Proposes the name “discrete” for the superficial, unconsolidated material which forms a mantle over a large part of the rock mass of the earth.

294 —— Origin of the physical features of the United States.
Discusses the origin of land forms and describes the characters of the physical features of the United States.

295 —— See Diller (J. S.), No. 234.
296 Gilbert (J. Z.). On the skull of Vertebratus (?) undata Cope. 
Describes material from the Loup Fork beds of Kansas.

Rept. to Comm. of Public Works and Mines, 46 pp. and map, Halifax, 
Nova Scotia, 1898. 
Describes the occurrence and distribution of gold, lead, and copper 
deposits in Nova Scotia.

298 — The geological horizons of some Nova Scotia minerals.
Mentions the geologic horizons at which certain minerals occur.

299 Girty (George H.). Description of a fauna found in the Devonian 
black shale of eastern Kentucky.
Discusses the correlation of the black shale with the Genesee shale 
of New York. Describes a new subgenus and two new species.

300 — A revision of the sponges and coelenterates of the Lower 
Helderberg group of New York.
Stuart Weller, Jour. of Geol., vol. vi, pp. 206-207 (§ 1.),
301 — Spencer (A. C.) and. The Devonian in southwestern Colorado.
See Spencer (A. C.) and Girty (G. H.), No. 725.

Describes occurrence and characters of trap rocks near Pottstown, Pa.

303 Goode (Richard U.). Bitterroot Forest Reserve [Idaho-Montana]. 
Nat. Geog. Mag., vol. ix, pp. 387-400, 4 figs. and map, 1898. 
Describes the general physiographic features of the region.

304 Goodrich (Harold Beach). Recent warpings as shown by drain­
age peculiarities [Alaska]. 
Describes the Alaskan drainage and the warpings of the region, as 
measured by the streams, and gives a summary of conclusions.

305 — See Spurr (J. E.), No. 739.

306 Goodwin (W. L.) and Miller (W. G.). Note on a mineral of the 
Columbite group.
Describes the occurrence of the mineral in Ontario and gives a chem­
ical analysis.
  Jour. of Gol., vol. vi, pp. 477-482, pl. xii, 1898.
  Describes characteristics of glacial and postglacial drainage of the region.

  Gives a section of the beds and describes the general character of the subdivisions of the Cretaceous of the region. Presents a classification of the Cretaceous group of southwest Kansas.

  Gives lists of fossils found in the geologic formations of the region and a bibliography of the subject.

310 Paleontology of the Cambrian terranes of the Boston Basin [Massachusetts].

311 Siluro-Devonian contact in western New York.
  Summary of paper read before the Harvard University Students' Geological Club.

312 Geology and paleontology of Eighteenmile Creek and the lake-shore sections of Erie County, New York. Part I.
  Describes the lithologic and faunal characters and occurrence of the Devonian strata, and discusses the geologic history of the region.

313 Grant (C. C.). Geological notes.
  Hamilton Assoc., Jour. and Proc., No. 14, pp. 89-100, 1898.
  Describes local features of the Silurian near Hamilton, Ontario.

314 Grant (U. S.). Sketch of the geology of the eastern end of the Mesabi iron range in Minnesota.
  Univ. of Minn., Engineers' Year Book, pp. 49-62, with map, 1898.
  Describes the physiography, geologic history, occurrence of Animikie and pre-Animikie rocks, diabase sills and gabbro, and the occurrence of iron ores.

315 [Review of "Iowa Geological Survey, Vol. VI."]
  Am. Geol., vol. xxi, pp. 64-65, 1898.

316 Gratacap (L. P.). Relation of James Hall to American geology.
317 **Gresley** (W. S.). Clay veins vertically intersecting Coal Measures.


Describes the occurrence and character of veins in coal, and discusses their age and origin. Includes a bibliography of the subject.


Describes the occurrence and distribution of the gypsum beds.

319 — The study of natural palimpsests.


Discusses the origin of metamorphic rocks.

320 — The gypsum deposits of Kansas.

The Mineral Industry, 1897, pp. 393-396, 1898.

Describes the occurrence, character, and distribution of the deposits.

321 **Griswold** (Leon S.). The geology of Helena, Montana, and vicinity.


Describes the character and occurrence of the igneous and metamorphic rocks and of the Algonkian, Cambrian, Silurian, and Carboniferous strata and the geologic structure of the region.

322 **Gulliver** (F. P.). Classification of coastal forms.


323 — Note on Monadnock.


324 **Gwillim** (J. C.). Some west Kootenay ore bodies [British Columbia].


Describes the occurrence and character of the gold, silver, and copper ores of the region.

**H.**

325 **Hall** (James). A discussion of Streptelasma and allied genera of rugose corals.


Gives a brief abstract of the paper.

326 — The Paleozoic hexactinellid sponges constituting the family Dictyospongidae.


Gives a brief abstract of the paper.


328 Hallock (William). Subterranean temperatures at Wheeling, West Virginia, and Pittsburg, Pennsylvania. School of Mines Quart., vol. xviii, pp. 148-152, 2 figs., 1898. Gives tables showing the temperatures at various depths in these wells.


334 Harris (Gilbert D.). The Lignitic Stage, Part I. Stratigraphy and Pelecypoda. Am. Pal., Bull., vol. ii, No. 9, pp. 3-102, 15 pls., 1897. Reviews descriptions of the stratigraphy in various States and includes lists of references to the literature. Describes the Pelecypoda, including a number of new species.

335 Haworth (Erasmus). Stratigraphy of the Kansas Coal Measures. Kan. Univ. Geol. Surv., vol. iii, pp. 13-105, pls. i-xxx, figs. 1-3, 1898. Describes the distribution and surface features of the Mississippian series, the character, occurrence, and distribution of the subdivisions of the Coal Measures, the correlation of sections, and comparison with Missouri and Iowa Coal Measures. Discusses the nomenclature employed.

336 — Annual Bulletin on Mineral Resources of Kansas for 1897. Kan. Univ. Geol. Surv., 98 pp., Lawrence, Kans., 1898. Contains statistics of production of the various economic products of the State, and notes on the occurrence and character of the lead and zinc ores, on the chemical and physical properties of Kansas coals, on the occurrence and origin of the Kansas oil and gas, on the geologic features of the gypsum beds, and on the occurrence of hydraulic cement and building stones.

338 **Hayes** (C. Willard). The continental divide in Nicaragua.

339 **Hedburg** (E.). Lead and zinc ores. The manner of their occurrence and their geological relation to the coal area of Missouri.
Discuss the origin of the lead and zinc ore bodies.

340 **Herrick** (C. L.). The geology of the environs of Albuquerque, New Mexico.
Am. Geol., vol. xxii, pp. 26-43, pl. vi, 5 figs., 1898.
Describes the occurrence of the igneous rocks, the Carboniferous and Cretaceous strata, and the river deposits.

341 ——— The occurrence of copper and lead in the San Andreas and Caballo mountains [New Mexico].
Am. Geol., vol. xxii, pp. 286-291, 1 fig., 1898.
Describes their occurrence in Carboniferous rocks and discusses the origin of the ore deposits.

342 ——— Papers on the geology of New Mexico.
Describes the geology of the Socorro Mountain, Limitar, and Mount Magdalena, and includes an account of the basic eruptives of the Magdalena district.

343 ——— The geology of the San Pedro and the Albuquerque districts [New Mexico].
Describes the geologic features of the region and the occurrence of Carboniferous and Cretaceous rocks.

344 **Hershey** (Oscar H.). Notes on the geology of Jamaica.
Describes the occurrence of a corraline limestone.

345 ——— Raised shore lines on Cape Maysi, Cuba.
Describes terraces on the eastern end of Cuba.

346 **Heydon** (A. Thurston). The geology of White Pass [Alaska].
Describes the general geologic features of the region and the occurrence of gold.

Describes the character, occurrence, and crystallographic characters of the material.
348 Hidden (W. E.) and Pratt (J. H.) on rhodolite, a new variety of garnet.


Describes the occurrence and chemical character of the material occurring in North Carolina.

349 — — Twinned crystals of zircon from North Carolina.


Describes crystallographic characters of the material.

350 — — On the associated minerals of rhodolite.


Describes the characters of a number of minerals associated with rhodolite in Macon County, North Carolina, and gives chemical analyses of garnite and iolite.


Describes the geologic and geographic features of the Isthmus and a section across Costa Rica. Compares the two sections. Discusses the evidences of land connections between the two oceans at different geologic periods. Includes petrographic descriptions of various specimens, by H. W. Turner.

353 — Cuba.


Includes a description of the physiographic features, geologic structure, and a geologic sketch map of the island.

354 — The stratigraphic succession in Jamaica.


Describes the physiography of the region, the character and occurrence of the Comanche and Gulf series and the Eocene strata and the occurrence of underground waters.

356 — — The Lower Cretaceous Gryphaeas of the Texas region.


Gives the history of the discovery of forms referred to Gryphaea pitcheri Morton, discusses their differentiation, and describes the geographic and stratigraphic distribution, classification and evolution of the Texas Lower Cretaceous Gryphaeas, with descriptions of several species.

Bull. 162—4
357 **Hill** (Robert T.) and **Vaughan** (Thomas Wayland). *Nueces folio, Texas.*

U. S. Geol. Surv., Geol. map of U. S., Folio No. 42, 1898.

Describes the physiography of the quadrangle and the character and occurrence of the Cretaceous, Neocene, and Pleistocene strata. Discusses the geologic history of the region and describes the occurrence of underground waters. Includes geologic and topographic maps and a sheet of columnar sections.

358 **Hille** (F.). *The western Ontario gold fields and their genesis.*


Discusses the origin of the gold ores.

359 **Hillebrand** (W. F.). *Distribution and quantitative occurrence of vanadium and molybdenum in rocks of the United States.*


Gives in tabular form the amounts of these substances in a large number of rocks from various parts of the United States, describes the chemical methods employed, and gives a summary of results.

360 **Hills** (R. C.). *Ore deposits of Camp Floyd district, Tooele County [Utah].*


See Bibliography and Index for 1896, No. 318.

361 — **The Costillo meteorite.**


See Bibliography and Index for 1896, No. 319.


363 — **The southern lobe of the Laurentide ice sheet.**


Contains a brief discussion of the extent of the ice sheet in northern United States.


Includes descriptions of occurrence of various minerals and chemical analyses of rocks.

365 — **On a remarkable occurrence of xenotime.**


Describes the characters of the mineral.

366 — **Baddeckite, a new variety of muscovite.**


Describes its occurrence in Nova Scotia and its chemical analysis.

367 **Hollick** (Arthur). *Notes on Block Island [Rhode Island].*


Includes notes on the geology and paleontology of the island.
368 Hollick (Arthur). Additions to the paleobotany of the Cretaceous formation on Staten Island [New York]. No. II.
Describes the relations of the Cretaceous strata and illustrates and describes some of the fossil plants.

369 — Geological notes. Long Island and Block Island.
Describes results of a study of the Cretaceous deposits and gives lists of fossils collected.

370 — The Cretaceous clay marl exposure at Cliffwood, New Jersey.
Discusses the stratigraphic relations and describes some of the fossils collected.

371 — Further notes on Block Island. Geology and botany.
Contains summary of paper read before the New York Academy of Sciences.

372 — The age of the Amboy clay series, as indicated by its flora.

373 — Further notes on Block Island. Geology and botany.
Summary of paper read before the New York Academy of Sciences.

374 — Some features of the drift on Staten Island, New York.

375 — Notes on the glacial phenomena of Staten Island [New York].
Contains summary of paper read before the New York Academy of Sciences.

375a — See Newberry (J. S.), No. 573a.

376 Hopkins (Thomas C.). Concentric weathering in sedimentary rocks.
Describes weathering of sedimentary rocks along the Ohio River.

377 — Some feldspars in serpentine, southeastern Pennsylvania.
Describes occurrence of feldspars and associated minerals in serpentine.

378 — Fire clays.
Describes the characters of fire clay and its occurrence in Pennsylvania.
52 BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 162.


381 — See Whitfield (R. P.), No. 877.


I.


384 — Chemical and mineral relationships in igneous rocks. Jour. of Geol., vol. vi, pp. 219-237, pls. ix-x; Review, Am. Geol., vol. xxii, p. 381 (½ p.), 1898. Discusses the occurrence of quartz, and of leucite and nephelite in igneous rocks, the interdependence of various minerals, and the chemical composition of the magma.


386 — Bysmaliths. Jour. of Geol., vol. vi, pp. 704-710, 1 fig., 1898. Applies the term to an intruded plug or core of igneous rock. Describes their manner of occurrence and refers to certain examples.

Jour. of Geol., vol. vi, pp. 757-758, 1898.

See Diller (J. S.), No. 234.

Irving (J. D.). Contact-metamorphism of the Palisades diabase.
Contains summary of paper read before the New York Academy of Sciences.

Jaggar (T. A., jr.). Some conditions affecting geyser eruptions.
Describes geyser phenomena of the Yellowstone National Park and the results of certain experiments. Discusses their bearing on the question of the cause of the various phases of geyser activity.

An occurrence of acid pegmatite in diabase.
Describes rocks from the Boston Basin.

Jefferson (M. S. W.). The postglacial Connecticut, at Turners Falls, Massachusetts.
Jour. of Geol., vol. vi, pp. 463-472, 7 figs., 1898.
Describes the changes of drainage and the postglacial history of the vicinity.

Gives a brief sketch of the manganese deposits of Nova Scotia.

Jones (A. W.). The Mentor beds.
Describes the general character and occurrence of the beds in the Lower Cretaceous and gives a list of fossils.

Jones (Lee H.). The upper limit of the Knobstone in the region of Borden, Indiana.
Describes the areal extent of the group in the region.

Jones (T. Rupert). On some Triassic (?) Estheriae from the Red beds or Cimarron series of Kansas.
Geol. Mag., dec. iv, vol. v, pp. 291-293, 1898.
Gives brief notes on some specimens.

Jopling (James E.). The Marquette Range. Its discovery, development, and resources.
Includes brief notes on the iron ore bodies and cross sections.

See Birkinbine (John), No. 78.


Keith (Arthur), Darton (N. H.) and. On dikes of felsophyre and basalt in Paleozoic rocks in central Appalachian Virginia. See Darton (N. H.) and Keith (A.), No. 198.

Kemp (James Furman). The geology of the magnetites near Port Henry, New York, and especially those of Mineville. Am. Inst. Mg. Engrs., Trans., vol. xxvii, pp. 146-203, pls. i-ix, figs. 1-12, 1898. Describes the general geologic features of the region, the occurrence, character, chemical composition, relations, and origin of the nonmanganese ore bodies. Includes a bibliography of the subject.

The geology of Moriah and Westport townships, Essex County, New York, with a geologic map. N.Y. State Mus., 48th Ann. Rept., vol. i, Appendix, pp. 325-355, 3 pls., 5 figs., and geologic map, 1897. See Bibliography and Index for 1895, No. 245.


The glacial or postglacial diversion of the Bronx River [New York] from its old channel. N. Y. Acad. Sci., Trans., vol. xvi, pp. 18-24, 1 fig., 1898. Discusses the recent geologic history of this river.
Contains summary of paper read before the New York Academy of Sciences.


Contains summary of paper read before the New York Academy of Sciences.

Refers to occurrence of telluride ores in the United States and other countries and gives list of papers describing such occurrences.

Describes the general geology of the locality in southern Wyoming and the occurrence of copper.

Describes the occurrence of clay in the various geologic formations of Missouri.

Discusses the general principles of geologic nomenclature and the use of local names in stratigraphy.

417 [Contribution to "A symposium of the classification and nomenclature of geologic time divisions."] Jour. of Geol., vol. vi, pp. 347-352, 1898.

Describes the sequence of the Coal Measures of Arkansas and discusses their relations with the Des Moines and Missourian series.

419 [Review of recent papers on the stratigraphy of the southern Ozarks.] Jour. of Geol., vol. vi, pp. 652-658, 1898.
420 **Keyes** (Charles R.) The genetic classification of geological phenomena.
   Jour. of Geol., vol. vi, pp. 809-815, 1898.
   Discusses previous attempts to form a genetic classification and gives a table showing the classification of geologic phenomena by genesis.

421 [Review of "Batesville sandstone of Arkansas," by Stuart Weller.]

422 [Review of "Geology of Massanutten Mountain in Virginia," by A. C. Spencer.]
   Am. Geol., vol. xxi, pp. 191-192, 1898.

423 Use of the term Augusta in geology.
   Am. Geol., vol. xxi, pp. 229-235, 1898.
   Discusses the nomenclature of the Mississippian series.

424 Carboniferous formations of southwestern Iowa.
   Gives a brief description of the subdivisions of the Missourian series exposed in this portion of the State.

425 Remarks on the classification of the Mississippian series.
   Discusses the use of the terms Osage and Augusta, as subdivisions of the Mississippian series.

426 [Review of "Occurrence of fossil fishes in the Devonian of Iowa," by Charles R. Eastman.]

427 [Review of "The special report on Kansas coal," by Erasmus Haworth and W. R. Crane.]

428 Eolian origin of the loess.
   Discusses the origin of the loess of the Mississippi Valley.

429 Geographic development of the Crimea.
   Iowa Acad. Sci., Proc., vol. v, pp. 52-54, 5 figs., 1898.
   Includes a brief statement of the method of stratigraphic correlation termed orotaxis and of the relations of grade plain and great plane of sedimentation.

430 Carboniferous formations of the Ozark region.
   Describes the general relations of the formations in the Ozark region and gives a table of correlation.

431 Some geological formations of the Cap-au-Gres uplift [Missouri].
   Describes a fault at the locality, the general geologic section, and names and describes a number of new formations.
432 **Keyes** (Charles R.). Modern stratigraphical nomenclature.
Discusses some principles of stratigraphic nomenclature.

433 —— The myth of the Ozark Isle.
Gives a summary of the geologic history of the Ozark region.

434 —— The principal Missourian section.

435 —— Structure of the coal deposits of the trans-Mississippian field.
Describes the general character of the rocks, the structure of the coal region and the occurrence and character of the coal beds.

436 **Killebrew** (J. B.). Mining Tennessee phosphates.
Includes notes on the occurrence of the phosphate deposits of Tennessee.

437 **Kimball** (James P.). Residual concentration by weathering as a mode of genesis of iron ores.
Am. Geol., vol. xxi, pp. 155-163, 1898.
Describes iron ores occurring in Washington and discusses the origin of such deposits.

438 **Kindle** (Edward M.). A catalogue of the fossils of Indiana, accompanied by a bibliography of the literature relating to them.
Gives a list of fossils and their geologic occurrence and a bibliography arranged alphabetically by authors' names.

439 **King** (Francis P.), **McCallie** (S. W.), **Yeates** (W. S.), and. A preliminary report on a part of the gold deposits of Georgia.
See Yeates (W. S.), McCallie (S. W.), and King (F. P.), No. 941.

440 **Kirby** (E. B.). The gold-ore deposits of Mount Caribou, Idaho.
Describes the ore bodies and discusses their origin.

441 —— [Occurrence of ore chutes].
Describes the occurrence of two ore chutes.

442 **Kirchner** (Walter C. G.). Contribution to the fossil flora of Florissant, Colorado.
Gives a list of plants previously described and describes several new species. Includes a bibliography.
Describes the occurrence and character of the soda deposits in western Nevada.

444 **Knight (F. C.).** A suspected new mineral from Cripple Creek [Colorado].  
See Bibliography and Index for 1896, No. 412.

445 **Knight (Wilbur C.).** Some new Jurassic vertebrates from Wyoming. First paper.  
Describes two new species of *Ceratodus*.

446 — Some new Jurassic vertebrates from Wyoming. Second paper.  
Describes a new genera and species, *Megalneusaurus rex*.  
Suggests the name Como group for the beds in which the fossil occurs.

447 — The building stones and clays of Wyoming.  
Includes brief notes on their occurrence.

448 — The natural soda deposits of Wyoming.  
Describes the occurrence and character of the soda deposits.

449 — See Oliphant (F. H.), No. 580.

450 **Knowlton (Frank Hall).** A catalogue of the Cretaceous and Tertiary plants of North America.  
*U. S. Geol. Surv., Bull.,* No. 152, 247 pp., 1898.  
Gives a list of North American works and papers consulted, an alphabetic list of Cretaceous and Tertiary plants, with reference to the original date and place of publication of each genus, synonym, and geographic and geologic distribution.

451 — [Fossil plants from San Pablo formation, California.]  
*Jour. of Geol.,* vol. vi, p. 498, 1898.  
Gives list of plants determined and considers them of Pliocene age.

452 — [Description of *Pityoxygen hollicki* n. sp.]  
*N. Y. Acad. Sci., Trans.,* vol. xvi, pp. 234-236, 2 figs., 1898.

453 — The Belly River horizon on the Upper Missouri.  
Contains summary of paper read before the Geological Society of Washington.

454 — The standing fossil forests of the Yellowstone National Park.  
*The Plant World,* vol. i, pp. 53-55, pl. 1, 1898.  
Describes the general features of the fossil forests.
455 Knowlton (Frank Hall). In a coal swamp.
Gives a brief account of the plants of the Coal Measures.

456 Kümmerl (Henry B.). The Newark system or Red Sandstone belt [New Jersey].
Describes the character, occurrence, and structure of the sedimentary and trap rocks and metamorphosed shales and their economic resources within the State.

457 — The age of the artifact-bearing sand at Trenton [New Jersey].
Discusses the age and origin of the sand.

458 Kunz (George F.). Meteoric stone from Andover [Maine].
Contains summary of paper read before the N. Y. Academy of Sciences.

459 Ladd (George E.). Geological phenomena resulting from the surface tension of water.
Discusses phenomena produced by capillary flocculation and floating of materials.

460 Lakes (Arthur). The geology of Aspen and the conditions existing in the Smuggler mine at the time of the fire [Colorado].
Describes the general geologic features of the region.

461 — Silver Cliff district [Colorado].
Describes the occurrence of the gold and silver ore bodies.

462 — Volcanic craters. Real and false craters and their relation to mining and ore deposits.
Discusses the occurrence of volcanic vents in Colorado.

463 — Rosita and Silver Cliff [Colorado].
Describes the occurrence of the silver-lead ores of the region.

464 — Telluride ores.
Describes the character and occurrence of some of the telluride ore deposits of Colorado.

465 — Prospecting experiences.
Describes geologic features about Salida and Rosita, Colorado.
466 Lakes (Arthur). The El Paso coal field [Colorado].
Describes the occurrence of coal north of Colorado Springs, Colorado.

467 — The fluorine mine [Cripple Creek, Colorado].
Describes the occurrence of the igneous rocks of the region and the occurrence of gold.

468 — Ore occurrence in the Red Mountain district, Colorado.
Describes the occurrence of the silver and copper ores of the region.

469 — Tellurium and the telluride ores.
Describes the general characters of the telluride ores of Colorado.

470 — A peculiar ore body.
Quotes a description of the Ann Lee Mine, Cripple Creek, Colorado, by R. A. F. Penrose, jr.

471 — Ores of the Vulcan mine [Colorado].
Describes occurrence of gold ores in Gunnison County, Colorado.

472 — Mount Caribou gold deposits [Idaho]
Describes the occurrence and origin of the ore deposits.

473 — The Wyoming oil fields.
Describes the occurrence of oil in the Salt Creek field.

Describes the occurrence of oil in the Cascade range of Washington.

475 Lane (A. C.). Magmatic differentiation in the rocks of the copper-bearing series.

476 — Note on a method of stream capture.

477 Lawson (William), Ellis (W. Hodgson) and. Chemical notes on the so-called Sudbury coal [Ontario].
See Ellis (W. H.) and Lawson (W.), No. 252.

478 Le Conte (Joseph). [Contributions to “A symposium of the classification and nomenclature of geologic time divisions.”]
Jour. of Geol., vol. vi, pp. 337-338, 1898.
479 Lee (Harry A.). Report of the State Bureau of Mines for the year 1897 [Colorado].
     Denver, Colo., 167 pp., 1898.
     Describes the character, occurrence, and production in 1897 of the economic mineral products of the various counties of Colorado.

     Jour. of Geol., vol. vi, pp. 758-759, 1898.

481 Leidy (Joseph). Fossil vertebrates from the Alachua clays of Florida.
     Describes the localities and the material obtained. Includes notes by F. A. Lucas and W. H. Dall.

     Jour. of Geol., vol. vi, pp. 527-541, 739-753, and 840-854, 1898.

483 Leonard (A. G.). Geology of Dallas County [Iowa].
     Iowa Geol. Surv., vol. viii, pp. 53-118, pls. iv-vi, figs. 1-8, and geologic map, 1898.
     Describes the physiography, the occurrence and character of the Carboniferous and Pleistocene formations, and the occurrence of coal, clay, building stone, road material, and natural gas.

484 — Bain (H. F.) and. The Middle Coal Measures of the western interior coal fields.
     See Bain (H. F.) and Leonard (A. G.), No. 45.

485 Leverett (Frank). The Peorian soil and weathered zone (Toronto formation?).
     Jour of Geol., vol. vi, pp. 244-249, 1898.
     Describes the occurrence of the formation and its bearing on the evidence of deglaciation within the glacial period.

486 — Correlation of moraines with beaches on the border of Lake Erie.
     Reviews some of the researches on the glacial phenomena of the region.

487 — The weathered zone (Sangamon) between the Iowan loess and Illinoian till sheet.
     Describes the distribution of the loess and till sheet and the character of the Sangamon soil horizon which occurs between them.

488 — The weathered zone (Yarmouth) between the Illinoian and Kansas till sheets.
     Describes the character and occurrence of the Yarmouth zone in Iowa.
489 Levy (Louis Edward). See Cabrera (R.), No. 117.


Describes the glacial phenomena of the region, the occurrence and character of the Silurian and Devonian strata, and of the economic products. Includes a list of papers on the region.


Describes the general geologic history and the occurrence and character of the ore deposits and of the Tertiary and Pleistocene strata, and includes a report on the fossil plants of the Payette formation.

492 — Boise folio, Idaho.


Describes the geologic and physiographic features of the quadrangle, the character and occurrence of the Tertiary, Pleistocene, and igneous rocks, and the occurrence of gold-bearing gravels and veins, coal, building stones, and artesian waters. Includes topographic and geologic maps and structure sections.

493 — Orthoclase as gangue mineral in a fissure vein.


Describes occurrence of orthoclase in ore deposits and discusses its origin.

494 — The canyons of the Salmon and Snake rivers [Idaho].


Describes the general physiographic features of the region. Comprises summary of paper read before the Geological Society of Washington.

495 — The primary gold deposits of the Sierra Nevada.


Describes the occurrence and character of the ore deposits and discusses their origin.

496 — See Diller (J. S.), No. 234.

497 Linton (Edward). On the formation of new ravines.


Describes the formation of gullies in the deforested areas of the South, with special reference to a particular locality.


502 — See Leidy (Joseph), No. 481.


507 — Copper traces in Bucks and Montgomery counties [Pennsylvania]. Franklin Inst., Jour., vol. cxlvi, pp. 416-423, with map, 1898. Describes the occurrence and the character of the formation in which they occur.

509 Mabry (T. O.). The brown or yellow loam of north Mississippi and its relation to the northern drift.
Jour. of Geol., vol. vi, pp. 273-302, 2 figs., 1898.
Describes the character, relations, and distribution of the brown or yellow loam, its relation to the Lafayette and Loess formations, and discusses the origin and age of the Loess loam.

510 McCallie (S. W.). A preliminary report on a part of the phosphates and marls of Georgia.
Describes the general distribution of phosphates and the occurrence, character, and distribution of the Georgia phosphates. Discusses the origin of phosphates.

511 — King (F. P.), and Yeates (W. S.). A preliminary report on a part of the gold deposits of Georgia.
See Yeates (W. S.), McCallie (S. W.), and King (F. P.), No. 941.

512 McCalley (Henry). See Birkinbine (John), No. 78.

513 McCharles (A.). Nickel mining in the Sudbury district [Canada].
Includes brief notes on the occurrence of nickel.

Gives a general description of the forms occurring in the Upper Cretaceous chalk of Kansas, with a description of several species, including one new one.

Describes the geologic and geographic history of the region.

515a Madeira (George). See Day (W. C.), No. 227.

516 Maguire (Don). Gold mines of Mercur [Utah].
Describes the occurrence of the ore bodies of the region.

517 Marbut (Curtis Fletcher). Geology of the Clinton sheet [Missouri].
Mo. Geol. Surv., vol. xii, Pt. II, pp. 20-104, 6 figs., and geologic map and cross sections, 1898.
Describes the physiographic features, the character, occurrence, and relations of the subdivisions of the Carboniferous formations, and the occurrence of the economic products of the region.

518 — Geology of the Calhoun sheet [Missouri].
Mo. Geol. Surv., vol. xii, Pt. II, pp. 108-191, figs. 7-17, and geologic map and cross sections, 1898.
Describes the physiographic features, the character of the subdivisions of the Carboniferous and Silurian formations, the geologic structure, and the occurrence of coal, clay, building stones, and lime.
519 Marbut (Curtis Fletcher). Geology of the Lexington sheet [Missouri].
Mo. Geol. Surv., vol. xii, Pt. II, pp. 196-247, figs. 18-23, and geologic map and cross sections, 1898.
Describes the physiographic features, the occurrence and character of the Carboniferous and Pleistocene formations and the occurrence of coal, building stones, and clays.

520 — Geology of the Richmond quadrangle, including portions of Ray and Carroll counties [Missouri].
Mo. Geol. Surv., vol. xii, Pt. II, pp. 232-308, figs. 24-29, and geologic map and cross sections, 1898.
Describes the physiographic features of the region, the character and occurrence of the Carboniferous and Pleistocene formations, and the occurrence of coal, building stones, and clays.

521 — Geology of the Huntsville quadrangle, including portions of Randolph, Howard, and Chariton counties [Missouri].
Mo. Geol. Surv., vol. xii, Pt. II, pp. 312-371, figs. 30-37, and geologic map, 1898.
Describes the physiography, the occurrence and character of the Carboniferous and Pleistocene formations, and the occurrence of coal and clays.

522 — Cote sans Dessein and Grand Tower [Missouri].
Describes the character and origin of certain physiographic features.

Describes two new species from the Ceratops beds.

524 — Jurassic formation on the Atlantic coast. Supplement.
Discusses a number of reviews of a former paper on this subject.

525 — Cycad horizons in the Rocky Mountain region.
Gives a brief account of their occurrence in the Black Hills.

526 — The value of type specimens and the importance of their preservation.

527 — The origin of mammals.

528 — The comparative value of different kinds of fossils in determining geological age.
Bull. 162—5
529 Marsh (O. C.). On the families of Sauropodous Dinosauria.
Gives a brief summary of the characters that distinguish the Sauropoda.

530 Martin (G. C.). On occurrence of dunite in western Massachusetts.
Describes the occurrence, field and structural relations, and the petrographic and chemical characters.

531 Mathews (Edward B.). An account of the character and distribution of Maryland building stones, together with a history of the quarrying industry.
Describes the occurrence and character of the granites, marbles, limestones, sandstones, and slate used as building materials. Includes a bibliography of the subject and several geologic maps.

532 — The maps and map makers of Maryland.
Describes the various maps that have been made of the State.

533 — The first geological excursion along the Chesapeake, in 1608.
Gives an account of topographic and geologic work done by Capt. John Smith.

534 — See Diller (J. S.), No. 234.

535 Matthew (George F.). Studies of Cambrian faunas.
Describes a new subfauna of the Paradoxides beds of the St. John group and Billing's primordial fossils of Vermont and Labrador.

536 — The oldest Paleozoic fauna.

537 — Some characteristic genera of the Cambrian.
Gives a summary of the relations of the various genera.

538 — [Review of "A revision of the Puerco fauna," by W. D. Matthews.]
Am. Geol., vol. xxi, pp. 190-191, 1898.

538a — Recent discoveries in the St. John group. No. 2.
Describes general characters of some of the Protolenus fauna and the geologic features of the Kennebecasis Valley.
539 Maxwell (Walter). Lavas and soils of the Hawaiian Islands.
Hawaiian Experiment Station, 186 pp., 4 pls. and map; Review, Am.
Describes the lavas, and the character of the soils derived from them.
Includes chemical analyses of the various lavas.

540 Maynard (George W.). The chromite deposits of Port au Port
Bay, Newfoundland.
Describes the occurrence of chrome ores in this region.

541 Mead (J. R.). The drill hole at Wichita [Kansas].
Gives the section to a depth of 642 feet.

542 Medeira (George). See Day (W. C.), No. 227.

543 Meem (James C.). [Geology and its relations to topography.]
Am. Soc. Civil Engrs., Trans., vol. xxxix, pp. 82-83, 1898.
In discussion of paper by John C. Branner on the same subject.

544 Merivale (Walter). Occurrences and mining of manjak, in Bar-
bados, West Indies.
119-127, 1898.
Describes occurrence of bituminous material locally known as manjak.

545 Merriam (John C.). The distribution of the Neocene sea urchins
of middle California, and its bearing on the classification of
the Neocene formations.
Discusses the occurrence and relations of species, the character and
relations of the San Pablo formation, the classification of the Neocene
and the correlation of the auriferous gravels.

546 — [Fossils from the San Pablo formation, California.]
Jour. of Geol., vol. vi, pp. 494-495, 1898.
Gives a list of fossils from Kirker Pass, Contra Costa County.

547 Merrill (F. J. H.). A guide to the study of the collections of the
New York State Museum.
Describes the general principles of geology and gives a brief account
of the various geologic subdivisions, and of the economic products
occurring in New York.

548 Merrill (F. J. H.). The geology of the crystalline rocks of south-
eastern New York.
N. Y. State Mus., 50th Ann. Rept., vol. i, Appendix A, pp. 21-31, pls. i-v,
1898.
Describes character and occurrence of the crystalline rocks and of
the pre-Cambrian, Cambrian, and Silurian strata.
549 Merrill (F. J. H.). The origin of the serpentine in the vicinity of New York.
Discusses the origin of serpentine and describes its occurrence in the vicinity of New York. Includes a list of papers consulted.

550 Road materials and road building in New York.
See Bibliography and Index for 1897, No. 427.

551 Geology of the vicinity of Greater New York.
Contains summary of paper read before the New York Academy of Sciences.

552 Merrill (George P.). Rocks, rock-weathering, and soils.

553 The physical, chemical, and economic properties of building stones.
Describes the geologic occurrence, weathering, and methods of testing building stones, with special reference to the Maryland building stones.

554 See Diller (J. S.), No. 234.

555 Merriman (Mansfield). The slate regions of Pennsylvania.
Stone, vol. xvii, pp. 77-90, 5 figs., 1898.
Describes the occurrence and character of slate in Pennsylvania.

556 See Day (W. C.), No. 227.

Contains notes on the placers and placer mining of the region.

558 Merrivak (Walter). Barbados Manjak.
Describes the occurrence and character of asphaltum on the island of Barbados in the West Indies.

559 Mickle (G. R.). Mineralogical notes on Sudbury anthracite [Ontario].
Describes character and occurrence of a coal-like substance.

560 Miller (Arthur M.). The hypothesis of a Cincinnati Silurian island.
Am. Geol., vol. xxii, pp. 78-85, 1898.
Discusses the evidence bearing on the theory of the Cincinnati uplift.
561 Miller (Arthur M.). Natural arches of Kentucky.
Describes the formation of natural bridges in the eastern Kentucky coal field.

562 Miller (Thomas D.). The recently developed oil field of Texas.
Eng. and Mg. Jour., vol. lxv, p. 734, 4 figs., 1898.
Describes occurrence of oil near Corsicana, Texas.

563 Miller (Willet G.). On some nickeliferous magnetites.
Contains brief note on the occurrence in Ontario.

564 — Note on some basic dikes and volcanic rocks of eastern Ontario and Quebec.
Refers to recent literature describing these rocks.

565 — Goodwin (W. L.) and. Note on a mineral of the columbite group.
See Goodwin (W. L.) and Miller (W. G.), No. 306.

566 Minot (Charles S.). A memento of Prof. Edward D. Cope.
Presents a table prepared by Professor Cope, showing his views of the phylogeny of the mammalia.

567 Moncton (G. F.). Notes on mining on the coast of British Columbia and the adjacent islands.
Describes the general geologic features and the occurrence of gold.

568 — Notes on the gold-bearing lodes of Cayoosh Creek, British Columbia.
Describes the occurrence of gold and the geologic structure of the region.

569 Moore (Joseph). Account of a morainal stone quarry of Upper Silurian limestone near Richmond [Indiana].
Describes glacial phenomena of the vicinity.

570 — The Randolph mastodon.
Describes remains of a mastodon found in Indiana.

Describes appliances for studying small detached crystals and crystals in thin sections.
70 BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY,


N.


Describes material mainly from the Carboniferous of the Mississippi Valley.

573a The later extinct floras of North America. Edited by Arthur Hollick.
U. S. Geol. Surv., Mon. XXXV, 151 pp., pls. i-lxvii, 1898.

574 Newell (F. H.). Mesa Verde [Colorado].
Describes physiographic features in southwestern Colorado.

575 Newsom (John F.). A geological section across southern Indiana, from Hanover to Vincennes.
Describes the physiographic features of the region and the occurrence of Silurian, Devonian, and Carboniferous strata.

576 The Knobstone group in the region of New Albany [Indiana].
Describes the character and occurrence of the formation.

J. B. Lippincott Company, Philadelphia, 405 pp., 1897.

578 Nicholson (John T.), Adams (Frank D.) and. Preliminary notice of some experiments on the flow of rocks.
See Adams (F. D.) and Nicholson (J. T.), No. 6.

579 Nitze (Henry B. C.) and Wilkins (H. A. J.). Gold mining in North Carolina and adjacent southern Appalachian regions.
N. C. Geol. Surv., Bull., No. 10, 164 pp., pls. i-x, figs. 1-31, 1897.
Describes the geographic distribution and geologic occurrence of the gold belts of the southern Appalachian region, with notes on mining and milling processes.

O.

Includes statistics of production, notes on occurrence in Indiana, by W. S. Blatchley, and notes on occurrence in California, Texas, and Wyoming, by W. C. Knight.

Describes the physiography of the region, the character and occurrence of the eruptive rocks, the fracture systems, and the origin and occurrence of the metalliferous deposits.

583 Orton (Edward). What geology owes to the miner of coal. Ohio Mining Journal, No. 25, pp. 82-90, 1898.
Gives a sketch of the early history of the science of geology.

Discusses the origin of petroleum and gas, the evidences of their ascending or descending in geologic formations, the dominant features in their accumulation, and the duration of their supply.

Gives thickness of the Huerfano series and a summary of the conclusions of R. C. Hills regarding their occurrence and character.

Describes the morphology of the skull and teeth and the characters of a series of skulls from the White River beds. Includes a bibliography.

Describes occurrence and character of the material.

Describes occurrence and characters of the material.


591 **Osborn** (Henry Fairfield). The origin of the Mammalia.
Discusses the relations of the subdivisions of the Mammalia.

592 — Reconstruction and model of Phenacodus primævus Cope.
Gives a brief account of its relations.

593 — Origin of the Mammalia.
Contains summary of paper read before the New York Academy of Sciences.

594 — A complete skeleton of Coryphodon radians. Notes upon the locomotion of this animal.
Describes new material from the Wasatch and Wind River beds, and reviews the literature of the genus.

595 — Models of extinct vertebrates.

596 **Packard** (Alpheus S.). A half century of evolution, with special reference to the effects of geological changes in animal life.

597 **Palmer** (C. S.) and **Stoddard** (W. B.). The dike on the Columbia vein in Ward district, Boulder County, Colorado.
Describes the chemical and microscopic characters of the dike rock.

598 **Parker** (Edward W.). Abrasive materials.
Includes statistics of production and notes on the occurrence of corundum in Ontario, by Courtenay De Kalb, and on the occurrence of pumicestone in Nebraska, South Dakota, and Utah.

599 — Fluorspar.
Includes statistics of production and notes on cryolite deposits of Greenland by H. S. Canby.

600 **Parsons** (Charles Lathrop), **Moses** (Alfred J.), and. Elements of mineralogy, crystallography and blowpipe analysis.
See Moses (A. J.) and Parsons (C. L.), No. 572.

601 **Patton** (H. B.). Spherulites containing chalcedony and opal in Colorado.
See Bibliography and Index for 1896, No. 528.
See Bibliography and Index for 1896, No. 529.

603 Tourmaline and tourmaline schists from Belcher Hill, Jefferson County, Colorado.

604 Pearce (Richard). The mode of occurrence of gold in the ores of the Cripple Creek district [Colorado].
See Bibliography and Index for 1896, No. 531.

605 Further notes on Cripple Creek ores [Colorado].
See Bibliography and Index for 1896, No. 532.

606 Occurrence of tellurium in oxidized form associated with gold.
Describes material from the Black Hills, South Dakota.

607 Some notes on the occurrence of uraninite in Colorado.
See Bibliography and Index for 1896, No. 533.

608 Notes on the occurrence of a rich silver and gold mineral containing tellurium in the Griffith lode, near Georgetown, Clear Creek County, Colorado.
See Bibliography and Index for 1896, No. 534.

609 Notes on the occurrence of tellurium in an oxidized form in Montana.
See Bibliography and Index for 1896, No. 535.

610 Note on the occurrence of rhodocrosite in the Original mine, Butte, Montana.
Contains brief description of occurrence and of the associated minerals.

611 Notes on the occurrence of selenium with pyrite rich in gold and silver.
Describes material from Mexico and gives the results of an assay.

612 Remarks on a gold nugget from Montana.
Describes a specimen from Bear Gulch, Montana, and gives its chemical analysis, showing the presence of tellurium.


616 Penfield (S. L.). See Brush (George J.), No. 114.

617 — [On krennerite from Cripple Creek, Colorado.] See Chester (A. H.), No. 150.


   Describes the occurrence of the iron ore in this region.

627 — Die Goldlagerstätten in Alabama.
   See Bibliography and Index for 1897, No. 478.

628 Pilsbry (Henry A.). Note on the "Florencia formation."
   Discusses the age of the beds and gives a list of fossils from Iowa City, Iowa.

629 Pirsson (L. V.). See Diller (J. S.), No. 234.

630 — Weed (W. H.) and. Geology and mineral resources of the Judith Mountains of Montana.
   See Weed (W. H.) and Pirsson (L. V.), No. 855.

631 Poole (Henry S.). The mineralogy of the Carboniferous.
   Contains brief notes on the mineral found in the Carboniferous formation of eastern Canada.

632 Powell (J. W.). An hypothesis to account for the movement in the crust of the earth.
   Jour. of Geol., vol. vi, pp. 1-9, 1898.

633 Pratt (J. H.). Mineralogical notes on cyanite, zircon, and anorthite from North Carolina.
   Describes the crystallographic characters of the material.

634 — Mineralogical notes on anthophyllite, enstatite, and beryl (emerald) from North Carolina.
   Describes their occurrence and crystallographic and chemical characters.

635. — On the origin of the corundum associated with the peridotites in North Carolina.
   Reviews the literature on the subject and discusses the origin and relations of corundum. Includes two geologic sketch maps.

636 — The occurrence, origin, and chemical composition of chromite.
   Describes occurrence in the Appalachian region.
637 Pratt (J. H.), Hidden (W. E.) and. On rhodolite, a new variety
of garnet.
See Hidden (W. E.) and Pratt (J. H.), No. 348.

637a — — Twinned crystals of zircon from North Carolina.
See Hidden (W. E.) and Pratt (J. H.), No. 349.

638 — — On the associated minerals of rhodolite.
See Hidden (W. E.) and Pratt (J. H.), No. 350.

639 Preston (H. L.). On iron meteorites, as nodular structures in
stony meteorites.
Describes the characters of certain meteorites and the occurrence of siderite in stony matter.

640 — San Angelo meteorite.
Describes the characters of the meteorite from Texas and gives a chemical analysis.

641 Price (J. A.). Notes on Indiana geology.
Ind. Acad. Sci., Proc. 1897; pp. 262-266, with geologic map and sections, 1898.
Describes the character and relations of the Knobstone group along a portion of White River.

642 Prosser (Charles S.). The classification and distribution of the
Hamilton and Chemung series of central and eastern New
York. Part I.
Describes the classification and stratigraphic and faunal characters of the series. Accompanied by geologic map.

643 — and Cumings (Edgar R.). Sections and thickness of the
Lower Silurian formations on West Canada Creek and in
the Mohawk Valley [New York].
Describes the stratigraphic relations and lithologic and faunal char­acters of the Lower Silurian formations of the region.

644 Purington (Chester Wells). Preliminary report on the mining
industries of the Telluride quadrangle, Colorado.
Gives a general description of the sedimentary and igneous rocks, the fissures and vein systems, and the occurrence of the silver and gold ores. Discusses the origin and age of the ore deposits.
645 **Quereau** (Edmund Chase). Topography and history of Jamesville Lake, New York.


Describes the general features of the region, the origin of this and similar lakes, and the peculiar features of the Jamesville Gorge.

646 **Quimby** (George E.). [Tripoli deposits of Newton County, Missouri.]

The Mineral Industry, 1897, p. 17, 1898.

Describes the character of the deposits.


Gives a brief description of the trap rock.

648 **Ransome** (F. Leslie). Some lava flows of the western slope of the Sierra Nevada, California.


Describes the physiography of the region, the occurrence, distribution, and chemical and petrographic characters of the latites, and discusses the classification of the rocks and the bearing of the lava flows on the evidence of orogenic movements.

649 **Reid** (Harry Fielding). The variations of glaciers. III.

Jour. of Geol., vol. vi, pp. 473-476, 1898.

Gives a summary of the report of the international committee on glaciers, showing the movements of existing glaciers.

650 —— The stratification of glaciers.


651 —— Notes on living and extinct species of North American Bovidae.


652 **Rhoads** (Samuel N.). Notes on the fossil walrus of eastern North America.


Reviews the literature and describes some of the characters of the fossil walrus.

653 **Rice** (William North). A suggestion in regard to the theory of volcanoes.


Describes the occurrence, relations, and chemical character of the limestone strata.

656 Rickard (T. A.). Vein structure in the Enterprise mine [Colorado]. 
Describes the vein phenomena in this mine.

657 — The minerals which accompany gold and their bearing upon the richness of the ore deposits. 

658 Ries (Heinrich). Geology of Orange County [New York]. 
Describes the physiography, the character, and occurrence of the pre-Cambrian, Cambrian, Silurian, Devonian, and Pleistocene rocks, and of the dike rocks, and the occurrence of road material, clays, building stones, and iron ores.

659 — Physical tests of the Devonian shales of New York State to determine their value for the manufacture of clay products. 
Describes the general properties of shales and the character and occurrence of the shale-bearing divisions of the Silurian and Devonian systems of New York.

660 — The clay-working industry of the United States in 1897. 
Includes statistics of production, analyses of clays, and general notes on the geologic occurrence of clays.

661 Clay deposits and clay industry in North Carolina. A preliminary report. 
N. C. Geol. Surv., Bull. No. 13, 157 pp., pls. i-vii, figs. 1-5, 1897; Reviews, Jour. of Geol., vol. vi, pp. 545-547; Am. Geol., vol. xxii, p. 382 (1 p.), 1898. 
Describes the origin, chemical and physical characters of clay, and the occurrence and character of the clays of North Carolina. Includes a bibliography.

662 — The fuller's earth of South Dakota. 
Describes its occurrence in the Black Hills.

663 — The clays and clay industry of Colorado. 
Describes its occurrence, character, and chemical composition.

664 — Allanite crystals from Mineville, Essex County, New York. 
Describes their occurrence and crystallographic characters.
665 Ries (Heinrich). Note on a beryl crystal from New York City.
Describes occurrence and crystallography.

666 — Physical tests of New York shales.
School of Mines Quart., vol. xix, pp. 192-194, 1898.
Describes the characters of the shales and gives a summary of the physical tests.

667 Clay industries of New York.
See Bibliography and Index for 1895, No. 398.

668 Riggs (E. S.). On the skull of Amphictis.
Describes material in the collections at Princeton University.

669 Roberts-Austin (Professor). Canada's metals.
Describes the mineral resources of Canada.

670 Roy (Andrew). Geology of the Jackson County coal in Ohio.
Describes the occurrence of coal in this county.

671 Ruedemann (B.). Development and mode of growth of Diplograptus McCoy.

672 The discovery of a sessile Conularia.

673 Additional note on the oceanic current in the Utica epoch.
Am. Geol., vol. xxi, pp. 75-81, figs. 1-2, 1898.
Discusses the evidences of Ordovician strata overlying the Adirondack crystalline area.

674 On the development of Tetradium cellulosum Hall sp.
Am. Geol., vol. xxii, pp. 16-25, pl. v, 1898.
Reviews the literature on the genus and describes material from the Trenton limestone of New York.

675 Synopsis of recent progress in the study of graptolites.
Reviews recent work on graptolites and gives a bibliography.

676 Russell (Israel Cook). Glaciers of Mount Rainier, with a paper on the rocks of Mount Rainier, by George Otis Smith.
Describes the physical features of the State of Washington and the glaciers and glacial phenomena of the region.
677 **Russell** (Israel Cook). The great terrace of the Columbia and other topographic features in the neighborhood of Lake Chelan, Washington.
Describes the occurrence of the terrace and other glacial features of the region.

678 — Topographic features due to landslides.
Describes some physiographic features of eastern Washington and Oregon.

679 — Geography of the Laurentian basin.
Includes a discussion of the glacial history of the region.

Describes occurrence and origin in the Albert Mines.

681 **Salisbury** (Rollin D.). The physical geography of New Jersey.
Describes the topographic features of the State and the process of their development.

682 — Surface geology. Report of progress [New Jersey].
Includes notes on the Paleozoic, Jura-Trias, Cretaceous, Tertiary, and Pleistocene formations, and a geologic map of the State.


Jour. of Geol., vol. vi, pp. 661-668, 1898.

685 **Sardeson** (F. W.). The so-called Cretaceous deposits in south-eastern Minnesota.
Jour. of Geol., vol. vi, pp. 679-691, 1898.
Discusses the evidences of the existence of Cretaceous deposits in situ and the probability of their having been transported by the glacier in this region.

686 — Interformational conglomerates in the Galena series.
Am. Geol., vol. xxii, pp. 315-323, pl. ix, 1898.
Describes the lithologic succession of the series in Minnesota.

687 — Remarks on the loess.
Discusses the limitation of the name to aeolian deposits.
688 **Schmidt (A.).** [Review of "Die Goldlagerstätten in Alabama," by William B. Phillips].
Zeit. für prak. Geol., 1898, heft 7, pp. 253-254, 1898.

689 **Schneider (Philip F.).** The limestones of central New York.
Describes the character and occurrence of limestones from the several geologic formations of the region.

690 **Schuchert (Charles), White (David) and.** Cretaceous series of the west coast of Greenland.
See White (D.) and Schuchert (C.) No. 872.

691 **Scott (William B.).** Memoir of Edward D. Cope.
Gives a sketch of the scientific work of Professor Cope.

692 — Preliminary note on the selenodont artiodactyls of the Uinta formation.
Describes new genera and species.

693 **Scupham (J. R.).** The buried river of California as a source of gold.
Describes former drainage systems and the occurrence of placer gold.

694 **Seward (A. C.).** Fossil plants for students of botany and geology.
Vol. I.

695 **Shaler (N. S.).** Geology of the Cape Cod district [Massachusetts].
Describes the general relations of the sedimentary series, understructure, Glacial deposits and history, and other features of the Cape Cod region.

696 **Shattuck (George Burbank).** Two excursions with geological students into the coastal plain of Maryland.
Describes Cretaceous and Tertiary sections in eastern Maryland.

697 — See **Clark (W. B.), No. 152.**

698 **Shephard (Edward M.).** A report upon Greene County [Missouri].
Mo. Geol. Surv., vol. xii, Pt. I, pp. 15-245, 5 pls., 1 fig., and geologic map, 1898.
Describes the physiographic features, the character, occurrence, and relations of the subdivisions of the Carboniferous, Devonian, and Silurian formations, the geologic structure and the occurrence of the economic products of the region.

Bull. 162——6
699 Sherzer (W. H.). Limestones of southeastern Michigan, with their associated sandstone, salt, and gypsum.
Describes the occurrence of Silurian and Devonian strata of the region.

700 Shimek (B.). Is the loess of aqueous origin?
Describes the fauna and its bearing on the origin of the loess. Gives a list of loess molluscan fossils.

701 Siebenthal (C. E.). The Bedford oolitic limestone [Indiana].
Describes its character and occurrence in Indiana.


703 Sjögren (Ahe). Notes on the eastern section of Costa Rica.
Includes brief notes on the stratigraphy of the region.

704 Slichter (Charles S.). Note on the pressure within the earth.
Jour. of Geol., vol. vi, pp. 65-78, 3 figs., 1898.
Discusses the magnitude of the pressure within the earth as influenced by changes in the ellipticity of the earth's figure.

705 Smith (E. A.). Alabama gold mining notes.
Contains brief notes on the gold fields of Alabama.

706 —— The clay resources of Alabama and the industries dependent upon them.
Describes the chemical and physical characteristics and occurrence of Alabama clays.

707 —— The stone industry of Alabama.
Describes the occurrence and distribution of building stones in Alabama.

708 Smith (Frank Clemens). The Potsdam gold ores of the Black Hills of South Dakota.
Describes the occurrence, character, and origin of the so-called Potsdam siliceous gold and silver ores.
709 Smith (George Otis). The rocks of Mount Rainier [Washington].
Describes the relations and characters of the granite and volcanic rocks of the region.

710 — Igneous phenomena in the Tintic Mountains, Utah.
Contains summary of paper read before the Geological Society of Washington.

711 — See Diller (J. S.), No. 234.

712 Smith (James Perrin). Geographic relations of the Trias of California.
Jour. of Geol., vol. vi, pp. 776-786, 1898.
Reviews the literature, gives a table showing the correlation of marine Triassic sediments, and discusses the faunal and stratigraphic features of the Trias of California.

713 — The development of Lytoceras and Phylloceras.
Discusses the nomenclature and law of acceleration of development, and describes material from the Horsetown beds of the Cretaceous.

714 Smith (William Sidney Tangier). A geological sketch of San Clemente Island [California].
Describes the topography and the character of the eruptive rocks and Tertiary deposits of the island.

Gives a summary of work done on the Pleistocene, Cretaceous, Jurassic-Trias, and Archean formations of the State.

Describes the process of filling up small lakes in central Michigan.

717 — The buried moraines of the Shunganunga [Kansas].
Describes the general features of the ice invasion of the region.

Describes the character and occurrence of the crystalline limestones and origin and relations of the gneisses.
Describes occurrence and characteristics of talc in this county.

720 — Weathering of alnoite in Manheim, New York.
Describes occurrence and petrographic and chemical characters of the rock.

721 — The New York talc industry in 1897.
Includes brief notes on the occurrence of talc.

722 Spaulding (M. B.). The Silver Pick mine, Wilson [Colorado].
School of Mines Quart., vol. xx, pp. 41–47, 1898.
Describes the general geologic features of Mt. Wilson and the occurrence of the gold ores.

723 Spencer (Arthur Coe). The geology of Massanutten Mountain in Virginia.
Describes the occurrence and character of the Silurian and Devonian formations, the geologic structure, physiographic features, and geologic history of the region.

724 — The Upper Cretaceous section in southwestern Colorado.
Contains summary of paper read before the Geological Society of Washington.

725 and Girty (G. H.). The Devonian in southwestern Colorado.
Contains summary of paper read before the Geological Society of Washington.

726 Spencer (J. W.). Great changes of level in Mexico and the interoceanic connections.
Describes the physical features of Mexico, the occurrence and character of the Lafayette, Columbia, and Coatzacoalcos formations and the evidence of recent changes of level.

727 — Another episode in the history of Niagara River.
728 Spencer (J. W.) Evidence of recent great elevation of New England.


729 — Niagara as a timepiece.


Discusses the geologic history of the Niagara River.

730 — Late formations and great changes of level in Jamaica.


Describes the topographic, hydrographic, and stratigraphic features of the region and its geologic history during Tertiary, Pleistocene, and Recent periods. Discusses the correlation of the formations.

731 — Resemblance between the declivities of high plateau and those of submarine Antillean valleys.


Describes valleys in the United States and compares them with submarine valleys.

732 — Another episode in the history of Niagara Falls.


Describes recent observations on the geologic history of the Niagara River.

733 — An account of the researches relating to the Great Lakes.

Am. Geol., vol. xxi, pp. 110-123, 1898.

Reviews the principal results of investigations of the geologic history of the Great Lakes.

734 — On Mr. Frank Leverett's "Correlation of moraines with beaches on the border of Lake Erie."

Am. Geol., vol. xxi, pp. 393-396, fig. 1, 1898.

Discusses the theory of Glacial dams.

735 — On the continental elevation of the Glacial epoch.


Discusses the evidence of such elevation.

736 — The West Indian bridge between North and South America.


Discusses the character of land valleys, submarine plateaus, and drowned valleys, and the evidences of a connection between the Atlantic and Pacific oceans.
BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 162.

737 **Spencer** (J. W.). Geological waterways across Central America.  
Describes the physiography of the region and discusses the evidences of former oceanic connections.

738 **Spencer** (L. J.). Diaphorite from Montana and Mexico.  
Describes crystallographic characters of the material. Discusses relations with brongniardite.

739 **Spurr** (Josiah Edward). Geology of the Yukon gold district, Alaska, with an introductory chapter on the history and condition of the district to 1897, by Harold Beach Goodrich.  
Describes the occurrence, character, and distribution of the sedimentary and igneous rocks and of the auriferous veins and placer deposits of the region. Discusses the evidences of movement in the earth's crust. Includes a report by F. H. Knowlton on the fossil plants collected, and a chapter on recent warpings of the region, by H. B. Goodrich.

739a —— Geology of the Aspen mining district, Colorado, with atlas.  
U. S. Geol. Surv., Mon. XXXI, 260 pp., pls. i-xliii, figs. 1-11, atlas sheets i-xxx, 1898.  
Describes the character and occurrence of the Cambrian, Silurian, Carboniferous, Jura-Trias, and Cretaceous sediments and the igneous rocks of the region. Includes description of the mines, a discussion of the character of the ores and ore deposition, and a discussion of fault phenomena.

740 **Squier** (G. H.). Studies in the driftless region of Wisconsin, II.  
Jour. of Geol., vol. vi, pp. 182-192, figs. 3-7, 1898.  
Describes occurrence and formation of beds of nonglacial origin.  
See Bibliography and Index for 1897, No. 577, for notice of first paper.

741 **Stanton** (Timothy W.). Memoir of Joseph Francis James.  
Gives a sketch of the life and scientific work of Professor James and includes a list of his published papers.

742 —— The Mesozoic section of Sierra Blanca, Texas.  
Contains summary of paper read before the Geological Society of Washington.

743 **Stevenson** (John J.). Notes on the geology of the Bermudas.  
Describes the materials forming the surface of the islands and the relations of the land and submerged area. Discusses the literature on the geologic history of the Bermudas.

744 —— [Geology and its relations to topography.]  
In discussion of paper by John C. Branner on the same subject.
745 **Stewart** (Alban). A contribution to the knowledge of the Ichthyic fauna of the Kansas Cretaceous.
   Describes a number of new species.

746 — Individual variations in the genus Xiphactinus Leidy.
   Describes material in the Kansas University museum.

747 — Some notes on the genus Saurodon and allied species.
   Reviews the literature on Saurocephalus and Saurodon and describes two new species of Saurodon.

748 — A preliminary description of seven new species of fish from the Cretaceous of Kansas.

749 **Stoddard** (W. B.), **Palmer** (C. S.) and. The dike on the Columbia vein in Ward district, Boulder County, Colorado.
   See Palmer (C. S.) and Stoddard (W. B.), No. 597.

750 **Stone** (A. M.). Corundum mining in North Carolina.
   Gives brief notes on the occurrence of corundum.

751 **Stone** (George H.). The granitic breccia of the Cripple Creek region [Colorado].
   Describes the occurrence of a number of dikes, and the character and relations of the associated granites and schists. Discusses the lacustral theory of the origin of certain deposits.

752 **Storms** (W. H.). Gold formations in California.
   Discusses the formation of fissure systems and the occurrence of gold veins and auriferous gravels in California.

753 **Taff** (Joseph A.). Geology of the McAlister quadrangle [Indian Territory].
   Contains summary of paper read before the Geological Society of Washington.

754 **Tarr** (R. S.). The peneplain.
   Am. Geol., vol. xxi, pp. 351-370, 1898.
   Discusses the evidence regarding the theory of the peneplain.

755 — Wave-formed cuspate forelands.
   Am. Geol., vol. xxi, pp. 1-12, pls. i-iv, 1898.
   Describes the character of the materials and mode of formation of cuspate forelands.
Describes the general physiographic and drainage features and geologic development of the State.

Describes the plains and plateaus and the influence of the Glacial period upon the topography and drainage systems of the State.

Describes the occurrence of gold in central Georgia.

Discusses the evidences of the abandoned beaches.

Describes the character of the gorges and discusses the various interpretations of the phenomena and of their correlation.

Discusses drainage features of the region.


Describes certain basalts and their bearing on the theory of differentiation of igneous magmas.

Gives a sketch of his life and character and a list of his publications.


766 Tilton (J. L.) and Bain (H. F.). Geology of Madison County [Iowa]. Iowa Geol. Surv., vol. vii, pp. 491-539, pls. x-xi, figs. 72-79, with geologic map, 1897.
Describes the physiographic features, the occurrence and character of the Carboniferous and Pleistocene formations, and the occurrence of building stone, road material, and coal.
767 **Todd** (James E.). A revision of the moraines of Minnesota. 
Reviews the work of Warren Upnam on the glacial features of Minnesota.

768 **Degradation of the loess.** 
Discusses different theories of the origin of the loess, and describes the character and process of its degradation.

769 **Section along Rapid Creek from Rapid City westward [South Dakota].** 
Describes the Algonkian, Cambrian, Carboniferous, Jurassic, and Cretaceous rocks of the section in the eastern part of the Black Hills. Includes brief notes on the economic products.

770 **A reconnaissance into northwestern South Dakota.** 
Describes the physiographic features and the occurrence and character of the Cretaceous and Tertiary rocks of the region. Includes brief notes on the economic products.

771 **The geology along the Burlington and Missouri Railway [South Dakota].** 
Includes general notes on the geology of the eastern portion of the Black Hills.

772 **Additional notes on the limits of the main artesian basin [South Dakota].** 
Includes sections of well borings in various parts of the artesian basin.

773 **The exploration of the White River bad lands in 1896 [South Dakota].** 
Describes the Cretaceous, Tertiary, and Pleistocene strata of the region and gives notes on the character of the economic products.

774 **The clay and stone resources of South Dakota.** 
Describes briefly the occurrence of clay and building stones.

775 **Is the loess of either lacustrine or semilacustrine origin?** 
See Bibliography and Index for 1897, No. 611.

776 **Turner** (Henry W.). Bidwell Bar folio, California. 
Describes the physiographic features and the character and occurrence of the Paleozoic, Tertiary, and Pleistocene rocks and of the gold gravels and quartz veins. Includes a description of the gold belt of California and geologic and topographic maps.
777 Turner (Henry W.). Notes on some igneous, metamorphic, and sedimentary rocks of the coast ranges of California.


Describes the occurrence and chemical characters of metabasalt, diabase, and serpentine, the occurrence of the Franciscan or Golden Gate series in the vicinity of Mount Diablo, and the occurrence of the San Pablo formation, with lists of fossils.

778 — Notes on rocks and minerals from California.


Describes the petrographic and chemical characters of a quartz-amphibole-diorite, a new amphibole pyroxene rock and quartz-alunite rock, and the occurrence of zircon, molybdenite, and tellurium.

779 — Origin of Yosemite Valley [California].


Contains summary of paper read before the Geological Society of Washington.

780 — The succession of the igneous rocks of the Sierra Nevada.


Contains summary of paper read before the Geological Society of Washington.

781 — Classification of igneous rocks.


782 — See Diller (J. S.), No. 234.

783 — See Hill (R. T.), No. 352.

784 Tyrrell (J. Burr). Report on the Doobaunt, Kazan, and Ferguson rivers and the northwest coast of Hudson Bay, and on two overland routes from Hudson Bay to Lake Winnipeg.


Describes the drainage and physical features of the region and the occurrence of Laurentian, Huronian, Cambrian, Silurian, and Glacial deposits.

785 — The glaciation of north-central Canada.

*Jour. of Geol., vol. vi, pp. 147-160, pls. iv-vi, 1898.*

Describes the general features of the glaciation of Canada.

786 — The Cretaceous of Athabasca River [Athabasca].

*Ottawa Nat., vol. xii, pp. 37-41, 1898.*

Describes the lithologic and faunal characters of the strata and discusses their correlation with the Cretaceous of the Rocky Mountain region.

787 — The glaciation of north-central Canada.


Describes the glacial history of the region.
788 Udden (Johan August). Loess as a land deposit.
   Discusses the aqueous and aeolian hypotheses of the origin of the
   loess.

789 — Fucoids or coprolites.
   Compares material found in the Devonian of the Mississippi Valley
   with Hall's description of Spirophyton and suggests a mechanical origin
   of these structures.

790 — A new well at Rock Island, Ill.
   Am. Geol., vol. xxi, pp. 199-200, 1898.
   Gives the section of the well to a depth of 635 feet.

791 — Some preglacial soils.
   xxi, pp. 262-264, 1898.
   Describes the occurrence in Iowa and Illinois and gives a list of fos­
   sils collected.

792 — The mechanical composition of wind deposits.
   Augustana Library Publications, No. 1, 69 pp., 1898.
   Discusses the character and mode of formation of wind deposits and
   its bearing on the problem of the loess.

793 — A geological romance.
   Describes the occurrence, character, and origin of the volcanic ash
   beds in Kansas.

794 Uhler (P. R.). Preliminary notice of a recent series of geological
   accumulations—the McHenry formation.
   Describes the occurrence, character, and flora of the formation on
   the western shore of Chesapeake Bay, in Maryland.


796 Upham (Warren). Niagara Gorge and Saint Davids Channel.
   ser., vol. vii, pp. 84-85, 1898.
   Describes the Niagara and Saint Davids gorges, the effect of the
   Laurentian glacial lakes on the gorge erosion, the epeirogenic move­
   ments of the region, and the duration of the falls and of the post-Glacial
   period.

797 — [Review of "Seventeenth Annual Report of the United States
   Geological Survey"]
   Am. Geol., vol. xxi, pp. 61-64, 1898.

798 — Shell-bearing drift on Moel Tryfair [Wales].
   Am. Geol., vol. xxi, pp. 81-86, 1898.
   Compares this drift with that near Boston and in New Hampshire.
BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 182.

Am. Geol., vol. xxi, pp. 126-128, 1898.

800 — [Review of "Report on Doobaunt, Kazan, and Ferguson rivers and the northwest coast of Hudson Bay, and on two inland routes from Hudson Bay to Lake Winnipeg," by J. B. Tyrrell.]
Am. Geol., vol. xxi, pp. 128-129, 1898.

801 — Valley moraines and drumlins in the English lake district [England].
Am. Geol., vol. xxi, pp. 165-170, 1898.
Describes certain drift phenomena in England and compares them with the drift of North America.

802 — Drumlins in Glasgow.
Am. Geol., vol. xxi, pp. 235-243, 1 fig., 1898.
Compares glacial phenomena of Scotland with those of North America.

803 — The parallel roads of Glen Roy [Scotland].
Am. Geol., vol. xxi, pp. 294-300, 1898.
Compares the glacial lakes of the region with those of North America.

804 — [Review of "Water resources of Indiana and Ohio," by Frank Leverett.]
Am. Geol., vol. xxi, p. 324 (½ p.), 1898.

805 — [Review of "New development in well boring and irrigation in eastern South Dakota," by N. H. Darton.]
Am. Geol., vol. xxi, p. 325 (½ p.), 1898.

806 — Ben Nevis, the last stronghold of the British ice-sheet.
Am. Geol., vol. xxi, pp. 375-380, 1898.
Describes glacial phenomena of the region and their resemblances to certain phenomena in North America.

807 — The Mecklenburg or Baltic moraines.
Am. Geol., vol. xxii, pp. 43-49, 1898.
Compares these moraines with those of the United States.

808 — [Review of "Geology of the Yukon gold district," by J. E. Spurr.]
Am. Geol., vol. xxii, pp. 49-50, 1898.

809 — [Review of "The Valley Regions of Alabama (Paleozoic strata), Parts I-II," by Henry McCalley.]
Am. Geol., vol. xxii, p. 52 (½ p.), 1898.

810 — [Review of "Summary report of the Geological Survey department (of Canada) for the year 1897."]
Am. Geol., vol. xxii, pp. 52-53, 1898.
811 **Upham** (Warren). Fjords and submerged valleys of Europe. 
Discusses evidence of Pleistocene uplift and refers to literature regarding a contemporaneous uplift in North America.

812 — Raised shore lines at Trondhjem [Norway].
*Am. Geol.*, vol. xxii, pp. 149-154, 1898.
Compares the raised shore lines with similar phenomena in eastern North America.

813 — Glacial rivers and lakes in Sweden.
Compares them with glacial lakes and rivers in the United States.


816 — Giants’ Kettles near Christiania and in Lucerne.
Compares them with similar glacial phenomena in America.


818 — [Review of “Interglacial deposits in Iowa.”]

819 — [Review of “Report on a traverse of the northern part of the Labrador Peninsula from Richmond Gulf to Ungava Bay,” by A. P. Low.]

820 — Primitive man in the Somme Valley [France].
Describes terraces and compares them with New England terraces. Correlates stages of the Ice Age with those in the United States.

821 — Evidences of epeirogenic movements causing and terminating the Ice Age.

822 — [Abstracts of geological papers read before the American Association for the Advancement of Science at the Boston meeting, 1898.]
823 **Upham** (Warren). Fluctuations of North American glaciation shown by interglacial soils and fossiliferous deposits.


824 —— Time of erosion of the Upper Mississippi, Minnesota, and St. Croix valleys.


### V.

825 **Van Diest** (E. C. and P. H.). Notes on the geology of the western slope of the Sangre de Cristo Range in Costillo County, Colorado.


See Bibliography and Index for 1896, No. 689.


Describes the physico-chemical principles operative in the alteration of rocks and their application to the changes in the earth's crust, and the general character of the molecular dynamic action and mass dynamic action accompanying it.

827 —— Estimates and causes of crustal shortening.

Jour. of Geol., vol. vi, pp. 10-64, 11 figs., 1898.

Discusses the evidences for the shortening of the earth crust and the causes which account for such phenomena.

828 —— The volume relations of original and secondary minerals in rocks.


829 —— See **Diller** (J. S.), No. 234.

830 **Van Ornum** (Mr.). [Geology and its relations to topography.]


In discussion of paper by John C. Branner on the same subject.


Names the species determined.

832 —— and **Hill** (R. T.). The Lower Cretaceous Gryphæas of the Texas region.

See Hill (R. T.), and Vaughan (T. W.), No. 356.
833 Vaughan (T. Wayland) and Hill (R. T.) Geology of the Edwards Plateau and Rio Grande Plain adjacent to Austin and San Antonio, Texas, with reference to the occurrence of underground waters.
   See Hill (R. T.) and Vaughan (T. W.), No. 355.

834 — — Nueces folio, Texas.
   See Hill (R. T.) and Vaughan (T. W.), No. 357.

   Jour. of Geol., vol. vi, pp. 257-272, 12 fgs., 1898.
   Describes the physiographic features of Spencer County, the occurrence and character of Tertiary strata and of the loess, and the oscillations evidenced by these deposits.

836 — An old river channel in Spencer County [Indiana].
   Ind. Acad. Sci., Proc., 1897, pp. 266-271, with geologic map and sections, 1898.
   Describes the physiography of the region and the occurrence of a river channel, as shown by well records. Discusses its probable Tertiary age.

837 Vermeule (C. C.). Notes and data pertaining to the physical geography of the State [New Jersey].
   N. J. Geol. Surv., Final Rept., vol. iv, 189 pp., 1898.
   Gives notes on the latitude and longitude of places, elevations, etc.

838 Wade (W. M.). Copper mining at Kamloops, British Columbia.
   Gives brief notes on the occurrence of copper.

839 Wadsworth (M. E.). The origin and mode of occurrence of the Lake Superior copper deposits.
   Discusses the phenomena of the alteration of rock masses, the formation of ore deposits, and the character and relations of the Keweenawan and Potsdam series and the lava flows.

840 — Some methods of determining the positive or negative character of mineral plates in converging polarized light with the petrographical microscope.
   Am. Geol., vol. xxi, pp. 170-175, 1898.

841 — Zirkelite—a question of priority.
   Discusses the use of the term in mineralogy and petrology.

842 Wagner (George). On some turtle remains from the Fort Pierre.
   Describes portions of Toxochelys latiremis Cope.
Gives a general review of the work undertaken by the Survey during the year 1897–98.

844 — Fossil Medusae.
Describes the occurrence and preservation of Medusae, and the characters of the forms from the Middle and Lower Cambrian, Jurassic, and Permian strata.

845 — Note on the brachiopod fauna of the quartzitic pebbles of the Carboniferous conglomerates of the Narragansett Basin, Rhode Island.
Names the Cambrian fossils found in the pebbles and discusses the evidence as to the locality from which the pebbles were derived.

Discusses various theories on the subject.

The Plant World, vol. i, pp. 75–76, 2 figs., 1898.
Describes Eucalyptus gouldii n. sp.

Describes the occurrence of melanotekite and kentrolite, pseudomorphs after phenacite, crystallized tapiolite and tantalite, and cobaltiferous smithsonite.

849 **Washington** (Henry S.). Sölvbergite and tinguaite from Essex County, Massachusetts.
Describes and compares their chemical composition with that of material from other localities.

850 — The Jerome (Kansas) meteorite.
Describes the microscopic and chemical characters of the material.

851 — The petrographical province of Essex County, Massachusetts. I.
Describes the characters of granite, akerite, nordmarkite, nepheline-syenite and pulaskitic syenite. Includes a number of chemical analyses.
852 Watson (Thomas L.). A preliminary petrographic report on metamorphic rocks in and around Dahlonega, Lumpkin County, Georgia.
Describes the schists and basic rocks of the region.

853 — Weathering of diabase near Chatham, Virginia.
Describes the petrographic character of the rock, gives chemical analyses of the fresh and weathered material, and discusses the process of decay in the rock weathering.

854 Weed (Walter Harvey). See Diller (J. S.), No. 234.

855 — and Pirsson (Louis Valentine). Geology and mineral resources of the Judith Mountains of Montana.
Describes the physiography, geologic history, occurrence, and character of the Paleozoic and Mesozoic rocks, the detailed geology, character, and occurrence of the igneous rocks, the dynamic and structural geology and the mineral resources of the region.

856 — — Geology of the Castle Mountain mining district, Montana.
See Bibliography and Index for 1896, No. 723.

857 Weeks (Fred Boughton). Bibliography and index of North American geology, paleontology, petrology, and mineralogy for 1897.
Contains list of titles of papers arranged alphabetically by authors' names and a subject index.

857a Weidman (Samuel). A contribution to the geology of the pre-Cambrian igneous rocks of the Fox River Valley, Wisconsin.
Describes the geologic features of the region and the petrographic characters of the igneous rocks. Includes a geologic map.

858 — See Diller (J. S.), No. 234.

859 Weller (Stuart). A bibliographic index of North American Carboniferous invertebrates.
Contains a chronologic catalogue of papers, a list of authors, a summary of classes and genera, and an alphabetical list of genera and species, with bibliographic references.
Bull. 162——7
860 Weller (Stuart). The Batesville sandstone of Arkansas.
Reviews the literature on the formation, describes fossils recently collected, and discusses its correlation from the paleontologic and stratigraphic data.

861 — Description of a new species of Hydreionocrinus from the Coal Measures of Kansas.

862 — Description of Devonian crinoids and blastoids from Milwaukee, Wisconsin.
Gives a brief account of the Devonian rocks and a description of several new species.

863 — [Review of “Fourteenth Annual Report of the New York State Geologist for 1894.”]
Jour. of Geol., vol. vi, pp. 205-207, 1898.

864 — Classification of the Mississippian series.
Discusses the principles of geologic classification; describes the geologic history prior to and during the formation of the Mississippian series and the character of the fauna and physical changes of the Osage epoch.

865 — The Silurian fauna interpreted on the epicontinental basis.
Jour. of Geol., vol. vi, pp. 692-703, 2 figs., 1898.
Discusses the character of the movement at the close of the Ordovician, the distribution of Silurian sediments, and the connection between the Silurian waters of Europe and America; compares the fauna of the two regions.


867 — Osage vs. Augusta.
Discusses the nomenclature of the Mississippian series.

868 Wells (J. Walter). The mispickel ores of Deloro, Ontario.
Describes the character and occurrence of the gold-bearing veins.

Describes character, origin, and classification of clay, its chemical and physical properties, and the occurrence of clay in various parts of Missouri.
870 White (David). Omphaloploios, a new Lepidodendroid type.
Describes material from the Lower Coal Measures of Missouri and the characters of Lepidodendron cyclostigma.

871 — The probable age of the McAlister coal group.
Contains summary of paper read before the Geological Society of Washington.

872 — and Schuchert (Charles). Cretaceous series of the west coast of Greenland.
Describes the general geologic features of the region and gives lists of fossils collected from the various localities.

873 White (I. C.). The Pittsburg coal bed.
Discusses the age of the coal bed and describes its structure and the lithologic character of the associated strata.

874 White (Theodore G.). A contribution to the petrography of the Boston Basin [Massachusetts].
See Bibliography and Index for 1897, No. 686.

875 Whiteaves (J. F.). On some fossil cephalopoda in the Museum of the Geological Survey of Canada, with descriptions of eight new species that appear to be new. From the Cambro-Silurian rocks of the Provinces of Quebec, Ontario, and Manitoba.
Ottawa Nat., vol. xii, pp. 116-127, 1898.

876 — Note on a fish tooth from the Upper Arisaig series of Nova Scotia.
Discusses its bearing on the age of the beds.


878 — Observations on the genus Barretia.
See Bibliography and Index for 1897, No. 693.
879 Whitten (W. M.). “Quicksand pockets” in the “blue clay” of South Bend [Indiana].
Describes local features of the drift.

880 Whittle (Charles L.). The clays and clay industries of Massachusetts.
Includes notes on the occurrence and distribution of clay deposits in Massachusetts.

881 — The building and road stones of Massachusetts.
Describes their general character and occurrence.

882 Wieland (George R.). The Protostegan Plastron.
Describes material from the Cretaceous of South Dakota.

883 Wilkens (H. A. J.), Nitze (Henry B. C.) and. Gold mining in North Carolina and adjacent southern Appalachian regions.
See Nitze (H. B. C.) and Wilkens (H. A. J.), No. 579.

884 Williams (Albert, jr.). Faults.
Describes the results of faulting and discusses the origin of faults.

885 Williams (E. H., jr.). [Geology and its relations to topography.]
In discussion of paper by John C. Branner on the same subject.

886 — Notes on Kansan drift in Pennsylvania.
Discusses certain glacial phenomena and describes the drift at East Warren, Pennsylvania.

887 Williams (Henry Shaler). The classification of stratified rocks.
Jour. of Geol., vol. vi, pp. 671-678, 1898.
Describes the work of the International Congress of Geologists and the U.S. Geological Survey in adjusting classifications and nomenclatures to a common scheme.

888 — [Review of “Volcanoes of North America; a reading lesson for students of geography and geology,” by Israel C. Russell.]

889 — [Review of “Geology of Johnson County, Iowa,” by Samuel Calvin.]


WEEKS. PALEONTOLOGY, PETROLOGY, AND MINERALOGY, 1898. 101

892 Williams (Henry Shaler). [Review of "Fossil Medusae," by Charles D. Walcott.]

893 —— [Review of "Report on the geology of southwest Nova Scotia, etc."]

894 Willis (Bailey). Some coal fields of Puget Sound [Washington],
Describes the physiography, stratigraphic succession, and structure of the region, discusses the age of the beds, and gives an account of the occurrence of coal.

895 — Stratigraphy and structure of the Puget group, Washington.
Describes the physiography of the region and the stratigraphy and structure of the Puget group. See Bibliography and Index for 1897, No. 699.

896 — Drift phenomena of Puget Sound [Washington].
Describes the physiography and Glacial phenomena and deposits of the region.

897 — Drift phenomena of Puget Sound and their interpretation.

898 — [Contribution to a "Symposium of the classification and nomenclature of geologic time divisions."]
Jour. of Geol., vol. vi, pp. 345-347, 1898.

899 — [Review of "The principles of pre-Cambrian geology" by C. R. Van Hise.]
Jour. of Geol., vol. vi, pp. 419-431, 1898.

900 —— See Diller (J. S.), No. 234.

Gives an account of the work of various parties that have collected fossils from the Cretaceous beds of Kansas.

902 — Birds, Dinosaurs, Crocodiles, Mosasaurs, and Turtles [Cretaceous].
Gives a general description of the various genera and also includes descriptions of many species.

903 — The Pleistocene of Kansas.
Gives a list and description of Pleistocene vertebrates in Kansas and describes the occurrence of the Equus beds.
904 Williston (S. W.). Notice of some vertebrate remains from the Kansas Permian.
   Describes fragments of Cricotus and Clepsydrops Cope. Considers the red beds Triassic.

905 — The sacrum of Morosaurus.
   Describes material from Converse County, Wyoming.

906 — [On the genus Platecarpus].
   Describes recently discovered material.

907 — [Contribution to "A symposium of the classification and nomenclature of geologic time divisions."]
   Jour. of Geol., vol. vi, pp. 342-345, 1898.

908 — Miocene Edentates.
   Refers to an error of Prof. Cope.

909 Willmot (A. B.). Notes on the Michipicoton gold field [Ontario].
   Contains brief notes on the gold ores north of Lake Superior.

910 Wilson (Herbert M.). Topography of Mexico.

   Describes the occurrence of Carboniferous rocks and Glacial drift.

912 Wilson (W. J.). Notes on the Pleistocene geology of a few places in the Ottawa Valley [Canada].
   Describes the glacial geology of the region.

913 Winchell (Horace V.). The Lake Superior iron ore region, U. S. A.
   Excerpt from the Federation Institution of Mg. Engrs., Trans., 70 pp., 7 figs., London, 1897; Review, Zeit. fur prak. Geol., 1898, heft 6, pp. 207-212, 1898.
   Gives a historical sketch of the region, a discussion of the geologic features and of the genesis of the ore deposits, and the classification of the pre-Silurian rocks.

914 — On the occurrence of cubanite at Butte, Montana.
   Am. Geol., vol. xxii, pp. 245 (‡ p.), 1898.
   Describes its character and occurrence.

915 Winchell (Newton H.). [Geology and its relations to topography.]
   In discussion of paper by John C. Branner on the same subject.
916 Winchell (Newton H.). The determination of the feldspars.  
Discusses methods of determining feldspars.

917 — [Review of "Volcanoes of North America; a reading lesson for students of geography and geology," by Israel C. Russell.]  

918 — Some resemblances between the Archean of Minnesota and Finland.  
Am. Geol., vol. xxi, pp. 222-229, 1898.  
Describes the succession of the Archean series in Minnesota and compares them with the Archean of Finland.

919 — The significance of the fragmental eruptive débris at Taylors Falls, Minnesota.  
Am. Geol., vol. xxii, pp. 72-78, 1898.  
Describes the occurrence of two beds of conglomerate and their age and relation to the igneous rocks. Notes similar occurrences at other localities.

920 — The question of the differentiation of magmas.  
Am. Geol., vol. xxii, editorial comment, pp. 113-123, 1898.  
Reviews the literature of the subject and gives the writer's views.

921 — Note on the characters of mesolite from Minnesota.  
Am. Geol., vol. xxii, pp. 228-230, 1898.  
Describes the microscopic characters of the material.

922 — The origin of the Archean igneous rocks.  
Reviews previous discussions of the subject and gives the author's views.

923 — Thomsonite and lintonite from the north shore of Lake Superior.  
Describes occurrence and character of the material.

924 — The oldest known rock.  
Describes certain greenstones and associated rocks.

925 Winslow (Arthur). A natural bridge in Utah.  
Describes its character and origin.

926 Wolff (J. E.). Petrography [vicinity of Boston, Mass.].  
Gives a brief note on the petrographic features of the region.
927 Wolff (J. E.). The relation of the granite to the ore deposits at Franklin Furnace, New Jersey.
Contains summary of paper read before the geological conference of Harvard University.

928 —— Preliminary descriptions of the specimens of igneous rocks in the collections from the Isthmus of Panama and Costa Rica, made by Robert T. Hill.
Includes brief description of the petrographic characters of the specimens.

929 —— Occurrence of native copper at Franklin Furnace, New Jersey.

930 —— See Diller (J. S.), No. 234.

931 —— and Brooks (Alfred Hulse). The age of the Franklin white limestone of Sussex County, New Jersey.
Gives a review of previous opinions, a description of the lithologic character and structure of the formation, and summary and conclusions.

932 Woodman (J. E.). Geology: North shore [vicinity of Boston, Mass.].
Describes the geologic features of the region and gives lists of papers on its geology.

933 Woolman (Lewis). Artesian wells in New Jersey.
Gives sections of many artesian wells.

934 —— Fossil mollusks and diatoms from the Dismal Swamp, Virginia and North Carolina: indication of the geological age of the deposits; with notes on the diatoms by Charles C. Boyer.
Describes the occurrence of the fossils, gives lists of those determined, and discusses the age of the beds.

935 Wortman (J. L.). The extinct Camelidæ of North America and some associated forms.
Includes a review of the genera and species of North American Tylopoda, a description of new material, and a discussion of the various steps in their evolution and of certain osteological characters.
936 Wright (G. Frederick). Supposed “corduroy road” of late glacial age at Amboy, Ohio.


937 — The age of Niagara Falls, as indicated by the erosion at the mouth of the gorge.


938 — A recently discovered cave of celestite crystals at Put-in-Bay, Ohio.


939 — Clayey bands of the glacial delta of the Cuyahoga River at Cleveland, Ohio, compared with those in the implement-bearing deposits of the glacial delta at Trenton, N. J.


940 — Glacial observations in the Champlain-St. Lawrence Valley.


Describes recent observations by the author.

941 Yeates (W. S.), McCallie (S. W.), and King (Francis P.). A preliminary report on a part of the gold deposits of Georgia.


Describes the occurrence of gold ores in the State, including local details of mines.
ADDENDA TO BIBLIOGRAPHIES OF PREVIOUS YEARS.

The papers in the foregoing bibliography which have the following numbers were printed in 1895, 1896, and 1897, or bear one of these dates. A few were overlooked in compiling the literature of those years (Bulletins 146, 149, and 156), but the greater portion were not received in time to be incorporated therein:

<table>
<thead>
<tr>
<th>Year</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1895</td>
<td>139</td>
</tr>
<tr>
<td>1896</td>
<td>380a, 380b, 415, 481, 510, 756, 869</td>
</tr>
<tr>
<td>1897</td>
<td>33, 118, 154, 325, 490, 702</td>
</tr>
<tr>
<td></td>
<td>34, 119, 180, 326, 552, 756</td>
</tr>
<tr>
<td></td>
<td>46, 120, 192, 327, 559, 766</td>
</tr>
<tr>
<td></td>
<td>47, 121, 193, 331, 568, 868</td>
</tr>
<tr>
<td></td>
<td>75, 132, 241, 334, 569, 874</td>
</tr>
<tr>
<td></td>
<td>76, 142, 252, 358, 570, 910</td>
</tr>
<tr>
<td></td>
<td>112, 151, 300, 405, 579, 913</td>
</tr>
</tbody>
</table>
## Classified Key to the Index

<table>
<thead>
<tr>
<th>Location</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>113</td>
</tr>
<tr>
<td>Alaska</td>
<td>113</td>
</tr>
<tr>
<td>Archean and Algonkian</td>
<td>113</td>
</tr>
<tr>
<td>General</td>
<td>113</td>
</tr>
<tr>
<td>Canada</td>
<td>113</td>
</tr>
<tr>
<td>New England</td>
<td>113</td>
</tr>
<tr>
<td>New York and New Jersey</td>
<td>113</td>
</tr>
<tr>
<td>Great Lakes region</td>
<td>113</td>
</tr>
<tr>
<td>Mississippi Valley</td>
<td>113</td>
</tr>
<tr>
<td>Rocky Mountain region</td>
<td>113</td>
</tr>
<tr>
<td>Arizona</td>
<td>113</td>
</tr>
<tr>
<td>Arkansas</td>
<td>113</td>
</tr>
<tr>
<td>Bermuda Islands</td>
<td>113</td>
</tr>
<tr>
<td>Bibliography</td>
<td>113</td>
</tr>
<tr>
<td>Biography</td>
<td>114</td>
</tr>
<tr>
<td>California</td>
<td>114</td>
</tr>
<tr>
<td>Cambrian</td>
<td>114</td>
</tr>
<tr>
<td>Canada</td>
<td>114</td>
</tr>
<tr>
<td>New England</td>
<td>114</td>
</tr>
<tr>
<td>New York</td>
<td>114</td>
</tr>
<tr>
<td>Appalachian region</td>
<td>114</td>
</tr>
<tr>
<td>Lake Superior region</td>
<td>114</td>
</tr>
<tr>
<td>Mississippi Valley</td>
<td>114</td>
</tr>
<tr>
<td>Rocky Mountain region</td>
<td>114</td>
</tr>
<tr>
<td>Canada</td>
<td>114</td>
</tr>
<tr>
<td>General</td>
<td>114</td>
</tr>
<tr>
<td>Athabasca</td>
<td>115</td>
</tr>
<tr>
<td>British Columbia</td>
<td>115</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>115</td>
</tr>
<tr>
<td>Northwest Territory</td>
<td>115</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>115</td>
</tr>
<tr>
<td>Ontario</td>
<td>115</td>
</tr>
<tr>
<td>Quebec</td>
<td>115</td>
</tr>
<tr>
<td>Carboniferous (including Permian)</td>
<td>115</td>
</tr>
<tr>
<td>Classification and nomenclature</td>
<td>115</td>
</tr>
<tr>
<td>Correlation</td>
<td>115</td>
</tr>
<tr>
<td>New England</td>
<td>115</td>
</tr>
<tr>
<td>New York</td>
<td>116</td>
</tr>
<tr>
<td>Appalachian region</td>
<td>116</td>
</tr>
<tr>
<td>Great Lakes region</td>
<td>116</td>
</tr>
<tr>
<td>Mississippi Valley</td>
<td>116</td>
</tr>
<tr>
<td>Great Plains region</td>
<td>116</td>
</tr>
<tr>
<td>Southwestern region</td>
<td>116</td>
</tr>
<tr>
<td>Rocky Mountain region</td>
<td>116</td>
</tr>
<tr>
<td>Pacific coast region</td>
<td>116</td>
</tr>
<tr>
<td>Central America</td>
<td>116</td>
</tr>
<tr>
<td>Topic</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Chemical analyses</td>
<td>116</td>
</tr>
<tr>
<td>Classification</td>
<td>118</td>
</tr>
<tr>
<td>Colorado</td>
<td>118</td>
</tr>
<tr>
<td>Connecticut</td>
<td>118</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>119</td>
</tr>
<tr>
<td>Cretaceous</td>
<td>119</td>
</tr>
<tr>
<td>Classification</td>
<td>119</td>
</tr>
<tr>
<td>Correlation</td>
<td>119</td>
</tr>
<tr>
<td>Greenland</td>
<td>119</td>
</tr>
<tr>
<td>Canada</td>
<td>119</td>
</tr>
<tr>
<td>Atlantic coast region</td>
<td>119</td>
</tr>
<tr>
<td>Mississippi Valley</td>
<td>119</td>
</tr>
<tr>
<td>Great Plains region</td>
<td>119</td>
</tr>
<tr>
<td>Rocky Mountain region</td>
<td>119</td>
</tr>
<tr>
<td>Southwestern region</td>
<td>119</td>
</tr>
<tr>
<td>Pacific coast region</td>
<td>119</td>
</tr>
<tr>
<td>Cuba</td>
<td>119</td>
</tr>
<tr>
<td>Devonian</td>
<td>119</td>
</tr>
<tr>
<td>Nomenclature and classification</td>
<td>119</td>
</tr>
<tr>
<td>Correlation</td>
<td>119</td>
</tr>
<tr>
<td>Canada</td>
<td>119</td>
</tr>
<tr>
<td>New England</td>
<td>119</td>
</tr>
<tr>
<td>New York</td>
<td>119</td>
</tr>
<tr>
<td>Appalachian region</td>
<td>119</td>
</tr>
<tr>
<td>Mississippi Valley</td>
<td>119</td>
</tr>
<tr>
<td>Rocky Mountain region</td>
<td>120</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>120</td>
</tr>
<tr>
<td>Dynamic geology</td>
<td>120</td>
</tr>
<tr>
<td>Economic geology</td>
<td>121</td>
</tr>
<tr>
<td>General</td>
<td>121</td>
</tr>
<tr>
<td>Alabama</td>
<td>121</td>
</tr>
<tr>
<td>Alaska</td>
<td>121</td>
</tr>
<tr>
<td>Arizona</td>
<td>121</td>
</tr>
<tr>
<td>Arkansas</td>
<td>121</td>
</tr>
<tr>
<td>California</td>
<td>121</td>
</tr>
<tr>
<td>Canada</td>
<td>121</td>
</tr>
<tr>
<td>Colorado</td>
<td>122</td>
</tr>
<tr>
<td>Cuba</td>
<td>122</td>
</tr>
<tr>
<td>Georgia</td>
<td>122</td>
</tr>
<tr>
<td>Greenland</td>
<td>122</td>
</tr>
<tr>
<td>Idaho</td>
<td>122</td>
</tr>
<tr>
<td>Illinois</td>
<td>122</td>
</tr>
<tr>
<td>Indiana</td>
<td>122</td>
</tr>
<tr>
<td>Indian Territory</td>
<td>122</td>
</tr>
<tr>
<td>Iowa</td>
<td>122</td>
</tr>
<tr>
<td>Kansas</td>
<td>122</td>
</tr>
<tr>
<td>Kentucky</td>
<td>122</td>
</tr>
<tr>
<td>Louisiana</td>
<td>122</td>
</tr>
<tr>
<td>Maryland</td>
<td>122</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>122</td>
</tr>
<tr>
<td>Mexico</td>
<td>123</td>
</tr>
<tr>
<td>Michigan</td>
<td>122</td>
</tr>
<tr>
<td>Minnesota</td>
<td>122</td>
</tr>
<tr>
<td>Missouri</td>
<td>122</td>
</tr>
<tr>
<td>Montana</td>
<td>123</td>
</tr>
</tbody>
</table>
### Economic geology—Continued.

<table>
<thead>
<tr>
<th>State</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nebraska</td>
<td>123</td>
</tr>
<tr>
<td>Nevada</td>
<td>123</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>123</td>
</tr>
<tr>
<td>New Jersey</td>
<td>123</td>
</tr>
<tr>
<td>New Mexico</td>
<td>123</td>
</tr>
<tr>
<td>New York</td>
<td>123</td>
</tr>
<tr>
<td>North Carolina</td>
<td>123</td>
</tr>
<tr>
<td>North Dakota</td>
<td>123</td>
</tr>
<tr>
<td>Ohio</td>
<td>123</td>
</tr>
<tr>
<td>Oregon</td>
<td>123</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>123</td>
</tr>
<tr>
<td>South Dakota</td>
<td>123</td>
</tr>
<tr>
<td>Tennessee</td>
<td>123</td>
</tr>
<tr>
<td>Texas</td>
<td>123</td>
</tr>
<tr>
<td>Utah</td>
<td>123</td>
</tr>
<tr>
<td>Virginia</td>
<td>123</td>
</tr>
<tr>
<td>Washington</td>
<td>123</td>
</tr>
<tr>
<td>West Indies</td>
<td>123</td>
</tr>
<tr>
<td>West Virginia</td>
<td>123</td>
</tr>
<tr>
<td>Wyoming</td>
<td>123</td>
</tr>
<tr>
<td>Economic products described</td>
<td>123</td>
</tr>
<tr>
<td>Florida</td>
<td>125</td>
</tr>
<tr>
<td>Geologic formations described</td>
<td>125</td>
</tr>
<tr>
<td>Geologic maps</td>
<td>131</td>
</tr>
<tr>
<td>Georgia</td>
<td>131</td>
</tr>
<tr>
<td>Glacial geology</td>
<td>131</td>
</tr>
<tr>
<td>General</td>
<td>131</td>
</tr>
<tr>
<td>Alaska</td>
<td>132</td>
</tr>
<tr>
<td>Canada</td>
<td>132</td>
</tr>
<tr>
<td>Colorado</td>
<td>132</td>
</tr>
<tr>
<td>Greenland</td>
<td>132</td>
</tr>
<tr>
<td>Illinois</td>
<td>132</td>
</tr>
<tr>
<td>Indiana</td>
<td>132</td>
</tr>
<tr>
<td>Iowa</td>
<td>132</td>
</tr>
<tr>
<td>Kansas</td>
<td>132</td>
</tr>
<tr>
<td>Michigan</td>
<td>132</td>
</tr>
<tr>
<td>Minnesota</td>
<td>132</td>
</tr>
<tr>
<td>New England</td>
<td>132</td>
</tr>
<tr>
<td>New York</td>
<td>132</td>
</tr>
<tr>
<td>Ohio</td>
<td>132</td>
</tr>
<tr>
<td>Washington</td>
<td>132</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>132</td>
</tr>
<tr>
<td>Greenland</td>
<td>132</td>
</tr>
<tr>
<td>Hawaiian Islands</td>
<td>132</td>
</tr>
<tr>
<td>Idaho</td>
<td>132</td>
</tr>
<tr>
<td>Illinois</td>
<td>132</td>
</tr>
<tr>
<td>Indiana</td>
<td>132</td>
</tr>
<tr>
<td>Indian Territory</td>
<td>133</td>
</tr>
<tr>
<td>Iowa</td>
<td>133</td>
</tr>
<tr>
<td>Isthmus of Panama</td>
<td>133</td>
</tr>
<tr>
<td>Jamaica</td>
<td>133</td>
</tr>
<tr>
<td>Juratzias</td>
<td>133</td>
</tr>
<tr>
<td>General</td>
<td>133</td>
</tr>
<tr>
<td>Correlation</td>
<td>133</td>
</tr>
<tr>
<td>Canada</td>
<td>133</td>
</tr>
</tbody>
</table>
Juratrias—Continued.

<table>
<thead>
<tr>
<th>Region</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic coast region</td>
<td>133</td>
</tr>
<tr>
<td>Great Plains region</td>
<td>133</td>
</tr>
<tr>
<td>Rocky Mountain region</td>
<td>133</td>
</tr>
<tr>
<td>Pacific coast region</td>
<td>133</td>
</tr>
<tr>
<td>Kansas</td>
<td>133</td>
</tr>
<tr>
<td>Kentucky</td>
<td>134</td>
</tr>
<tr>
<td>Labrador</td>
<td>134</td>
</tr>
<tr>
<td>Louisiana</td>
<td>134</td>
</tr>
<tr>
<td>Maine</td>
<td>134</td>
</tr>
<tr>
<td>Maryland</td>
<td>134</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>134</td>
</tr>
<tr>
<td>Mexico</td>
<td>134</td>
</tr>
<tr>
<td>Michigan</td>
<td>135</td>
</tr>
<tr>
<td>Minerals described</td>
<td>135</td>
</tr>
<tr>
<td>Minnesota</td>
<td>136</td>
</tr>
<tr>
<td>Mississippi</td>
<td>136</td>
</tr>
<tr>
<td>Missouri</td>
<td>136</td>
</tr>
<tr>
<td>Montana</td>
<td>136</td>
</tr>
<tr>
<td>Nebraska</td>
<td>136</td>
</tr>
<tr>
<td>Nevada</td>
<td>136</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>136</td>
</tr>
<tr>
<td>New Jersey</td>
<td>136</td>
</tr>
<tr>
<td>New Mexico</td>
<td>137</td>
</tr>
<tr>
<td>New York</td>
<td>137</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>137</td>
</tr>
<tr>
<td>Nomenclature</td>
<td>137</td>
</tr>
<tr>
<td>North Carolina</td>
<td>137</td>
</tr>
<tr>
<td>North Dakota</td>
<td>138</td>
</tr>
<tr>
<td>Ohio</td>
<td>138</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>138</td>
</tr>
<tr>
<td>Oregon</td>
<td>138</td>
</tr>
<tr>
<td>Paleontology</td>
<td>138</td>
</tr>
<tr>
<td>General</td>
<td>138</td>
</tr>
<tr>
<td>Cambrian</td>
<td>138</td>
</tr>
<tr>
<td>Silurian</td>
<td>138</td>
</tr>
<tr>
<td>Devonian</td>
<td>139</td>
</tr>
<tr>
<td>Carboniferous (including Permian)</td>
<td>139</td>
</tr>
<tr>
<td>Juratrias</td>
<td>139</td>
</tr>
<tr>
<td>Cretaceous</td>
<td>139</td>
</tr>
<tr>
<td>Tertiary</td>
<td>139</td>
</tr>
<tr>
<td>Pleistocene</td>
<td>140</td>
</tr>
<tr>
<td>Genera and species described</td>
<td>140</td>
</tr>
<tr>
<td>Petrology</td>
<td>156</td>
</tr>
<tr>
<td>General</td>
<td>156</td>
</tr>
<tr>
<td>Alaska</td>
<td>157</td>
</tr>
<tr>
<td>Arkansas</td>
<td>157</td>
</tr>
<tr>
<td>California</td>
<td>157</td>
</tr>
<tr>
<td>Canada</td>
<td>157</td>
</tr>
<tr>
<td>Colorado</td>
<td>157</td>
</tr>
<tr>
<td>Connecticut</td>
<td>157</td>
</tr>
<tr>
<td>Georgia</td>
<td>157</td>
</tr>
<tr>
<td>Hawaiian Islands</td>
<td>157</td>
</tr>
<tr>
<td>Idaho</td>
<td>157</td>
</tr>
</tbody>
</table>
### Petrology—Continued.

<table>
<thead>
<tr>
<th>Location</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian Territory</td>
<td>157</td>
</tr>
<tr>
<td>Maine</td>
<td>157</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>157</td>
</tr>
<tr>
<td>Mexico</td>
<td>157</td>
</tr>
<tr>
<td>Michigan</td>
<td>157</td>
</tr>
<tr>
<td>Minnesota</td>
<td>157</td>
</tr>
<tr>
<td>Montana</td>
<td>157</td>
</tr>
<tr>
<td>New Jersey</td>
<td>157</td>
</tr>
<tr>
<td>New Mexico</td>
<td>157</td>
</tr>
<tr>
<td>New York</td>
<td>157</td>
</tr>
<tr>
<td>North Carolina</td>
<td>157</td>
</tr>
<tr>
<td>Oregon</td>
<td>157</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>157</td>
</tr>
<tr>
<td>Utah</td>
<td>157</td>
</tr>
<tr>
<td>Virginia</td>
<td>157</td>
</tr>
<tr>
<td>Washington</td>
<td>157</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>157</td>
</tr>
</tbody>
</table>

Rocks described: 157

**Pennsylvania** 159

**Physiographic geology** 160

**Pleistocene**

- General 160
- Correlation 161
- Canada 161
- New England and New York 161
- Atlantic coast region 161
- Great Lakes region 161
- Mississippi Valley 161
- Rocky Mountain region 161
- Southwestern region 161
- Pacific coast region 161

**Rhode Island** 161

**Silurian**

- General 161
- Canada 161
- New England 161
- New York 161
- Appalachian region 161
- Mississippi Valley 161
- Rocky Mountain region 162

**South Carolina** 162

**South Dakota** 162

**Tennessee** 162

**Tertiary**

- General 162
- Classification 162
- Correlation 162
- Atlantic coast region 162
- Appalachian region 162
- Mississippi Valley 162
- Great Plains region 162
- Rocky Mountain region 162
- Texas 162
- Pacific coast region 162
<table>
<thead>
<tr>
<th>Location</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>162</td>
</tr>
<tr>
<td>Utah</td>
<td>163</td>
</tr>
<tr>
<td>Vermont</td>
<td>163</td>
</tr>
<tr>
<td>Virginia</td>
<td>163</td>
</tr>
<tr>
<td>Washington</td>
<td>163</td>
</tr>
<tr>
<td>West Indies</td>
<td>163</td>
</tr>
<tr>
<td>West Virginia</td>
<td>163</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>163</td>
</tr>
<tr>
<td>Wyoming</td>
<td>163</td>
</tr>
</tbody>
</table>
INDEX.

[The numbers refer to the entries in the Bibliography.]

Alabama.
- Alabama gold mining, Smith, No. 705.
- Brown ore deposit, Phillips, No. 626.
- Clay resources, Smith, No. 706.
- Eocene fossils from Alabama, Aldrich, No. 12.
- Gold mining in southern Appalachians, Nitze and Wilkens, No. 579.
- New subgenus of Coralliophaga, Ball, No. 189.
- Stone industry, Smith, No. 707.

Alaska.
- Country of the Klondike, Dunn, No. 242.
- Geology of White Pass, Heyden, No. 346.
- Gold fields of southern Alaska, Becker, No. 56.
- Recent warpings, Goodrich, No. 304.

Archean and Algonkian.
- General.
  - Pre-Cambrian igneous rocks, Wolfman, No. 857a.
  - Summaries of pre-Cambrian literature, Leith, No. 482.

Canada.
- Archean of eastern Canada, Ellis, No. 233.
- Clastic Huronian rocks, Coleman, No. 161.
- Geology of French River sheet, Bell, No. 68.
- Northwest coast of Hudson Bay, Tyrrell, No. 784.
- Rocks of Laurentian system, Adams, No. 2.

New England.
- Blue Hills complex, Crosby, No. 170.
- Holyoke folio, Emerson, No. 258.

New York and New Jersey.
- Administrative report, Smock, No. 715.
- Age of Franklin white limestone, Wolff and Brooks, No. 931.
- Collections of N.Y. State Museum, Merrill, No. 547.
- Description of faulted region, Darton, No. 192.
- Geology of crystalline rocks, Merrill, No. 548.
- Geology of Lake Placid region, Kemp, No. 406.
- Geology of Orange County, Ries, No. 658.

Great Lakes region.
- Archean of Minnesota and Finland, Winchell, No. 918.
- Geology of Keweenaw area, Elftman, No. 259.
- Lake Superior copper deposits, Wadsworth, No. 839.

Mississippi Valley.
- Geological occurrence of clays, Keyes, No. 415.

Bermuda Islands.
- Geology of the Bermudas, Stevenson, No. 743.

Archæan and Algonkian—Continued.

Rocky Mountain region.
- Geology of Helena, Griswold, No. 321.
- Potash gold ores, Smith, No. 708.
- Section along Rapid Creek, Todd, No. 760.
- Ternite foilio, Emmons, No. 259.

Arizona.
- Anthracite coal in Arizona, Blake, No. 82.
- Copper industry of Arizona, Douglas, No. 237.
- Mining in Yavapai County, Blaney, No. 87.
- Species of Bos in the Quaternary, Blake, No. 23.
- Wolframite in Arizona, Blake, No. 86.

Arkansas.
- Batesville sandstone, Weller, No. 860.
- Bonanza, Arkansas, coal mines, Bain, No. 44.
- Carboniferous formations of Ozark region, Keyes, No. 430.
- Cement materials of Arkansas, Branner, No. 96.
- Equivalents of Coal Measures of Arkansas, Keyes, No. 418.
- Myth of Ozark Isle, Keyes, No. 433.
- Origin of certain siliceous rocks, Derby, No. 233.

Bibliography.
- Bibliografía geológica de la república Mexicana, Aguilar, No. 11.
- Bibliographic index of North American Carboniferous invertebrates, Weller, No. 859.
- Bibliography of North American geology, etc., Weeks, No. 857.
- Carboniferous boulder train, Fuller, No. 280.
- Catalogue of fossils of Indiana, Kindle, No. 438.
- Clay deposits of North Carolina, Ries, No. 661.
- Clay veins vertically intersecting coal measures, Gresley, No. 317.
- Cretaceous Foraminifera of New Jersey, Bagg, No. 27.
- Evolution of Amblypoda, Osborn, No. 589.
- Extinct Rhinoceroses, Osborn, No. 585a.
- Fossil flora of Florissant, Kirchner, No. 442.
- Genera of Paleozoic Bryozoa, Simpson, No. 702.
- Geology of Aspen mining district, Emmons, No. 206a.
BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [Bull. 162.

Bibliography—Continued.
Geology of Keweenawan area, Elftman, No. 250.
Geology of Orange County, Eies, No. 658.
Geology of Seneca County, Lincoln, No. 490.
Geology, vicinity of Boston, Crosby, No. 169.
Geology, vicinity of Boston, Woodman, No. 922.
Joseph Francis James, Gilbert, No. 292.
Lignite stage, Harris, No. 334.
Magnetite area near Port Henry, Kemp, No. 403.
Maryland building stones, Mathews, No. 531.
Memoir of Joseph Francis James, Stanton, No. 741.
Northern Black Hills, Frazer, No. 277.
Occurrence and associates of telluride ores, Kemp, No. 413.
Origin and significance of spines, Beecher, No. 60.
Origin of serpentine, Merrill, No. 549.
Paleontology, eastern Massachusetts, Grabaun, No. 200.
[Physiography of New England], Davis, No. 200.
Robert Hay, Thompson, No. 784.
Study of graptolites, Euedeman, No. 675.

Biography.
Joseph Francis James, Gilbert, No. 292.
Memoir of Edward D. Cope, Scott, No. 691.
Memoir of Joseph Francis James, Stanton, No. 741.
Memoir of Prof. Edward D. Cope, Minor, No. 566.
Relation of James Hall to American geology, Gratacap, No. 316.
Robert Hay, Thompson, No. 784.

California.
AuKiferous conglomerate of Transvaal, Becker, No. 58.
Basic dikes and volcanic rocks, Miller, No. 564.
Bidwell Bar folio, Turner, No. 776.
Bituminous rock deposit, Cooper, No. 164.
Bituminous rock deposits, Fairbanks, No. 264.
Buried rivers as a source of gold, Seupham, No. 693.
Development of Lytoceras and Phylloceras, Smith, No. 713.
Distribution of Neocene sea arches, Merriam, No. 545.
Earthquakes in California in 1896 and 1897, Perrine, No. 623.
Fossils from San Pablo formation, Merriam, No. 546.
Fossil plants from San Pablo formation, Knowlton, No. 451.
Geographic relations of Trias, Smith, No. 712.
Geology of southern coast ranges, Fairbanks, No. 262.
Gold formations, Storms, No. 752.
Igneous rocks of Sierra Nevada, Turner, No. 780.
Lava flows of Sierra Nevada, Ransome, No. 648.
Mother lode, Browne, No. 113.

California—Continued.
Occurrence of tourmaline, Orcutt, No. 581.
Origin of Yosomite Valley, Turner, No. 779.
Oscillations of Pacific coast, Blake, No. 81.
Petroleum, Oliphant, No. 580.
Platinum, Day, No. 226.
Primary gold deposits of Sierra Nevada, Lindgren, No. 495.
Rocks and minerals from California, Turner, No. 778.
Rocks of coast ranges, Turner, No. 777.
San Clemente Island, Smith, No. 714.
Sierra Nevada fault scarp, Fairbanks, No. 263.
Southern California petroleum, Cooper, No. 165.
Stone, Day, No. 227.
Tessa coal mines, Horsewill, No. 379.

Cambrian.
Canada.
Formations of Ottawa district, Ellis, No. 256.
Northwest coast of Hudson Bay, Tyrrell, No. 784.
Recent discoveries in St. John group, Matthew, No. 538a.
Traverse of northern Labrador, Low, No. 500.
New England.
Blue Hills complex, Crosby, No. 170.
Holovoke folio, Emerson, No. 258.
New York.
Collectors of New York State Museum, Merrill, No. 547.
Description of faulted region, Darton, No. 192.
Geology of Clinton County, Cushing, No. 182.
Geology of crystalline rocks, Merrill, No. 548.
Geology of Essex County, Kemp, No. 405.
Geology of Orange County, Ellis, No. 658.

Appalachian region.
Tazewell folio, Campbell, No. 127.

Lake Superior region.
Lake Superior copper deposits, Wadsworth, No. 839.
Mississippi Valley.
Eruptive debris at Taylors Falls, Winchell, No. 919.
Geological occurrence of clays, Keyes, No. 415.
Pre-cambrian igneous rocks, Weidman, No. 857a.
The Ozark Uplift, Broadhead, No. 108.

Rocky Mountain region.
Geology of Aspen mining district, Spurr, No. 739e.
Geology of Helena, Griswold, No. 321.
Potsdam gold ores, Smith, No. 708.
Section along Rapid Creek, Todd, No. 769.
Tennmile folio, Emmens, No. 259.

Canada.
General.
Abrasive materials, Parker, No. 598.
Archean of eastern Canada, Ellis, No. 253.
Cambrian faunas, Mathews, No. 535.
Canada's metals, Roberts-Austin, No. 669.
Canada—Continued.

General—Continued.

Fossil Cephalopoda, Whiteaves, No. 375.
Glacial observations in Champlain-St. Lawrence Valley, Wright, No. 940.
Glaciation of north-central Canada, Tyrrell, No. 785, 787.
History of Niagara River, Spencer, No. 732.
Mineralogy of the Carboniferous, Poole, No. 631.
Niagara Gorge, Upham, No. 796.
Occurrence of mammoth and mastodon remains, Bell, No. 68.
On the genus Lepidophloios, Dawson, No. 223.
Pleistocene in Ottawa Valley, Wilson, No. 912.
Pre-glacial decay of rocks, Chalmers, No. 140, 141.
Rocks of Laurentian system, Adams, No. 2.
Summary report for 1896, Dawson, No. 222.

Athabasca.

Cretaceous of Athabasca River, Tyrrell, No. 786.

British Columbia.

Boundary and Trail Creek, Austin, No. 20.
Copper mines at Kamloops, Wade, No. 836.
Gold-bearing lodes, Moncton, No. 568.
Gold-bearing placers, Merritt, No. 557.
Hillsou Lake, Brewer, No. 99.
Lillooet River and Squamish Trail, Brewer, No. 104.
Mining districts in British Columbia, Hardman, No. 331.
Mining in British Columbia, Moncton, No. 567.
Mining operations, Carlyle, No. 132.
Pemberton Meadows and the Blackwater, Brewer, No. 103.
Platinum, Day, No. 226.
Prospecting on Lillooet, Brewer, No. 102.
Rossland, Brewer, No. 101.
Sandon district, Brewer, No. 100.
West Kootenay ore bodies, Galliun, No. 324.

New Brunswick.

Bay of Fundy trough, Bailey, No. 31.
Notes on albtlite, Rutherford, No. 680.
Recent discoveries in St. John group, Matthew, No. 538a.

Northwest Territory.

Northwest coast of Hudson Bay, Tyrrell, No. 784.

Nova Scotia.

Baddeckite, Hoffman, No. 366.
Bay of Fundy trough, Bailey, No. 31.
Fish tooth from upper Arnsag, Whiteaves, No. 376.
Geological horizons of Nova Scotia minerals, Gilpin, No. 298.
Manganese deposits, Jennison, No. 394.
Ores of Nova Scotia, Gilpin, No. 297.
Physiography and geology of Kings County Ami, No. 13.

Canada—Continued.

Nova Scotia—Continued.

Geological notes, Grant, No. 313.
Geology of French River sheet, Bell, No. 68.
Glacial and Interglacial deposits at Toronto, Coleman, No. 162.
Granites and arkoses, Barlow and Ferrier, No. 50.
Mastodon in Ontario, Ami, No. 14.
Michipicton gold field, Willmot, No. 909.
Mispickel gold ores, Wells, No. 868.
Nickeliferous magnesites, Miller, No. 563.
Nickel mining in Sudbury district, McCharles, No. 513.
Nodular granite from Pine Lake, Adams, No. 3.
Occurrence of xenotime, Hoffman, No. 865.
On a mineral of columbite group, Goodwin and Miller, No. 306.
Sands and clayes of Ottowa Basin, Ellis, No. 254.
Western Ontario gold fields, Coleman, No. 102.
Western Ontario gold fields, Ellis, No. 258.

Quebec.

Geology of Montreal, Adams, No. 4.
Gold-bearing deposits of Quebec, Chalmers, No. 142.
Granites and arkoses, Barlow and Ferrier, No. 50.
Problems in Quebec geology, Ellis, No. 255.
Sands and clays of Ottowa Basin, Ellis, No. 254.

Carboniferous (including Permian).

Classification and nomenclature.

Bethany limestone, Bain, No. 39.
Classification of Mississippian series, Keyes, No. 423.
Coal fields of Indian Territory, Drake, No. 239.
Middle Coal Measures, Bain and Leonard, No. 45.
Osage vs. Augusta, Weller, No. 867.
Use of term Augusta, Keyes, No. 423.

Correlation.

Batesville sandstone, Weller, No. 860.
Carboniferous formations of Ozark region, Keyes, No. 430.
Correlation of section at Nebraska City, Nebraska, Beede, No. 64.
Equivalent of Coal Measures of Arkansas, Keyes, No. 418.
Middle Coal Measures, Bain and Leonard, No. 45.
Stratigraphy of Kansas Coal Measures, Hawthorn, No. 335.

New England.

Brachiopod fauna of quartzitic pebbles of Carboniferous conglomerates, Walcott, No. 845.
Holyoke folio, Emerson, No. 258.
Carboniferous (including Permian)—Continued. 

Great Plains region—Continued.

Mineral resources of Kansas, Haworth, No. 336.

Stratigraphy of Kansas Coal Measures, Haworth, No. 335.

Stratigraphy of Shawnee County, Beede, No. 65.

Underground waters of Nebraska, Darton, No. 194.

Vertebrate remains from Kansas Permian, Williston, No. 904.

Southwestern region.

Age of McAlister coal group, White, No. 871.

Batesville sandstone, Weller, No. 860.

Carboniferous formations of Ozark region, Keyes, No. 420.

Coal fields of Indian Territory, Drake, No. 239.

Geology of McAlister quadrangle, Taff, No. 753.

Texas oil horizons, Dumble, No. 241.

Texas Permian, Cummins, No. 180.

The Ozark Uplift, Broadhead, No. 108.

Rocky Mountain region.


Geology of Aspen mining district, Spurr, No. 739a.

Geology of Helena, Grieswold, No. 321.

Geology of New Mexico, Herrick, No. 342.

Geology of San Pedro and Albuquerque districts, Herrick, No. 343.

Occurrence of copper and lead, Herrick, No. 341.

Section along Rapid Creek, Todd, No. 769.

Tennille folio, Emmons, No. 259.

Pacific coast region.

Bidwell Bar folio, Turner, No. 776.

Central America.

Geological waterways across Central America, Spencer, No. 737.

Chemical Analyses.


Agirite-trachyte, Washington, No. 849.

Akerite, Washington, No. 851.

Albite, Diller, No. 234.

Alnoite, Smyth, No. 720.

Andesite, Hooker, No. 56.

Andesite, Ransome, No. 648.

Andesite, Smith, No. 714.

Aporphyolite, Diller, No. 234.

Augite-andesite, Ransome, No. 648.

Augite-latite, Ransome, No. 648.

Augite-porphyrite, Lord, No. 499.

Baddeckite, Hoffman, Nos. 364, 366.

Biotite-andesite, Ransome, No. 648.

Biotite-latite, Ransome, No. 648.

Biotite-porphyrite, Lord, No. 499.

Boldechite, Hoffman, Nos. 384, 368.

Basilite, Diller, No. 234.

Basilite, Turner, No. 777.

Biotite-augite-latite, Ransome, No. 648.

Biotite-andesite, Diller, No. 234.

Biotite-granite, Diller, No. 234.

Biotite-latite, Ransome, No. 648.

Biotite-lavasite, Ransome, No. 648.

Biotite-porphyrite, Lord, No. 499.

Boldechite, Hoffman, Nos. 384, 368.

Basilite, Diller, No. 234.

Basilite, Turner, No. 777.

Biotite-augite-latite, Ransome, No. 648.

Biotite-andesite, Diller, No. 234.

Biotite-granite, Diller, No. 234.

Biotite-lavasite, Eakle, No. 244.

Biotite-porphyrite, Lord, No. 499.

Boldechite, Hoffman, Nos. 384, 368.

Basilite, Diller, No. 234.

Basilite, Turner, No. 777.

Biotite-augite-latite, Ransome, No. 648.

Biotite-andesite, Diller, No. 234.

Biotite-granite, Diller, No. 234.

Biotite-lavasite, Eakle, No. 244.

Biotite-porphyrite, Lord, No. 499.

Boldechite, Hoffman, Nos. 384, 368.

Basilite, Diller, No. 234.

Basilite, Turner, No. 777.

Biotite-augite-latite, Ransome, No. 648.

Biotite-andesite, Diller, No. 234.
Chemical Analyses—Continued.

Camptonyle, Lord, No. 499.
Cancrinite, Diller, No. 234.
Cement, Haworth, No. 336.
Chalk, Branner, No. 96.
Chalk, Diller, No. 234.
Chromite ore, Maynard, No. 540.
Ciminite, Ransome, No. 648.
Clay, Bain, Nos. 35, 37.
Clay, Blatchley, No. 88.
Clay, Ries, Nos. 159, 160, 161, 163.
Clay, Smith, No. 706.
Clay, Wheeler, No. 899.
Clay, Branner, No. 96.
Clay slate, Diller, No. 234.
Clinohedrite, Penfield and Foote, No. 619.
Coal, Bain, Nos. 33, 44.
Coal, Blake, No. 82.
Coal, Campbell, No. 127.
Coal, Crane, No. 167.
Coal, Diller, No. 234.
Coal, Ellis and Lawson, No. 252.
Coal, Hoffman, No. 364.
Coal, Willis, No. 894, 895.
Cyanite-granite gneiss, Hoffman, No. 364.
Dacite, Becker, No. 56.
Dacite, Diller, No. 234.
Dacite-porphyry, Diller, No. 234.
Dacite, Smith, No. 714.
Dacite, Diller, No. 234.
Dacite, Smith, No. 714.
Dacite-porphyry, Diller, No. 234.
Diabase, Diller, No. 234.
Diabase, Turner, No. 777.
Diabase, Watson, No. 853.
Diallage, Diller, No. 234.
Dike rock, Palmer and Stoddard, No. 597.
Diopsiwe, Diller, No. 234.
Diorite, Becker, No. 56.
Diorite, Diller, No. 234.
Diorite, Purington, No. 644.
Dunite, Martin, No. 590.
Esmolite-syenite, Cushing, No. 181.
Enstatite, Pratt, No. 634.
Enstatite-diabase-porphyry, Lord, No. 499.
Epiludorite, Turner, No. 777.
Erionite, Eakle, No. 243.
Feldspar, Diller, No. 234.
Felsophyre, Darton and Keith, No. 198.
Fibroferrite, Hoffman, No. 364.
Fourchite, Turned, No. 777.
Fuller's earth, Ries, No. 602.
Gabbro, Becker, No. 56.
Gabbro, Smith, No. 714.
Gabbro-diorite, Diller, No. 234.
Gahnite, Hidden and Pratt, No. 350.
Garnetiferous gabbro, Diller; No. 234.
Granite, Adams, No. 3.
Granite, Day, No. 227.
Granite, Diller, No. 234.
Granite, Evans, No. 201.
Gratae, Mathews, No. 531.
Granite, Weidman, No. 857a.
Granite, Washington, No. 849.
Granitite gneiss, Hoffman, No. 364.
Graywacke, Diller, No. 234.
Groundite, Washington, No. 849.

Chemical Analyses—Continued.

Hornblende-diorite-porphyry, Diller, No. 234.
Hornblende-gabbro, Clements, No. 159.
Hornblende-mica-andesite, Diller, No. 234.
Hornblende-pyroxene-andesite, Ransome, No. 648.
Hypersthene, Diller, No. 234.
Hypersthene-andesite, Diller, No. 234.
Hypersthene-andesite, Smith, No. 709.
Iolite, Hidden and Pratt, No. 350.
Iron ore, Birkhbine, No. 78.
Iron ore, Grant, No. 214.
Iron ore, Kemp, Nos. 453, 455.
Iron ore, Kimbal, No. 437.
Iron ore, Ries, No. 658.
Keratophyre, Weidman, No. 857a.
Krennerite, Chester, No. 150.
Lapilli, Diller, No. 234.
Lavas, Maxwell, No. 539.
Lepidoleneane, Diller, No. 234.
Limestone, Bain, No. 36.
Limestone, Benedict, No. 71.
Limestone, Beyer, No. 76.
Limestone, Bishop, No. 81.
Limestone, Diller, No. 234.
Limestone, Haworth, No. 227.
Limestone, Mathews, No. 531.
Limestone, Presser and Cunsings, No. 643.
Limestone, Richardson, No. 655.
Lintonite, Winchell, No. 923.
Liparite, Diller, No. 234.
Litchfieldite, Washington, No. 851.
Lithoidite, Diller, No. 234.
Loess, Bain, No. 34.
Marble, Day, No. 227.
Marble, Diller, No. 234.
Marble, Mathews, No. 531.
Melanotektite, Warren, No. 848.
Metachryolite, Diller, No. 234.
Metachryolite, Weidman, No. 857a.
Meteorite, Preston, No. 640.
Meteorite, Washington, No. 850.
Mica-diorite, Clements, No. 159.
Mica-schist, Diller, No. 234.
Microline, Diller, No. 234.
Minette, Diller, No. 234.
Monzonite, Ransome, No. 548.
Natural gas, Haworth, No. 386.
Nepheline-syenite, Diller, No. 234.
Nephelite, Diller, No. 234.
Nevdite, Diller, No. 234.
Nordmarkite, Washington, No. 851.
Olivine-basait, Ransome, No. 648.
Olivine-diabase, Diller, No. 234.
Oolite, Diller, No. 234.
Orendite, Diller, No. 234.
Orthoclase, Diller, No. 234.
Orthoclase, Lindgren, No. 493.
Paisante, Washington, No. 849.
Pearlite, Penfield, No. 618.
Peridotite, Clements, No. 159.
Peridotite, Diller, No. 234.
Phonolite, Diller, No. 234.
Phonolite, Washington, No. 849.
Phosphorite rock, Brown, No. 111.
Classification—Continued.

Classification and nomenclature of geologic time divisions, Williston, No. 907.
Classification of Mississippian series, Weller, No. 864.
Classification of stratified rocks, Williams, No. 887.
Genetic classification of geological phenomena, Keyes, No. 420.
Geological versus the petrographical classification of igneous rocks, Cross, No. 172.
Geology of Erie County, Grabau, No. 312.
Rock classification, Williams, No. 353.
Symposium of classification, Calvin, No. 125.
Use of local names in geology, Keyes, No. 416.

Colorado.

Anthracite in the Rockies, Hoes, No. 380.
Devonian in southwestern Colorado, Spencer and Girty, No. 725.
Dike on Columbia vein, Palmer and Stoddard, No. 597.
Clays of Colorado, Ries, No. 663.
El Paso coal field, Lakes, No. 466.
Fluorine mine, Lakes, No. 467.
Fossil flora of Florissant, Kirchner, No. 442.
Geology of Aspen, Lakes, No. 460.
Geology of Aspen mining district, Emmons, No. 260.
Geology of Aspen mining district, Spur, No. 736.
Granite breccias of Cripple Creek, Stone, No. 751.
Krennerite from Cripple Creek, Stone, No. 150.
Mesa Verde, Newell, No. 574.
Mines of La Plata Mountains, Petre, No. 625.
Mining industries of Telluride quadrangle, Purington, No. 964.
Ore occurrence in Red Mountain, Lakes, No. 468.
Ores of Vulcan mine, Lakes, No. 471.
Peculiar ore body, Lakes, No. 470.
Prospecting rednery, Lakes, No. 465.
Rosita and Silver Cliff, Lakes, No. 463.
Silver Cliff district, Lakes, No. 461.
Silver Pick mine, Spaulding, No. 722.
Telluride ore, Pearce, No. 613.
Telluride ores, Lakes, No. 464.
Telluride veins in La Plata Mountains, Austin, No. 23.
Tellurium and Telluride ores, Lakes, No. 469.
Tennille folio, Emmons, No. 259.
Upper Cretaceous section, Spencer, No. 724.
Vein structure in Enterprise mine, Rickard, No. 659.
Volcanic craters, Lakes, No. 462.
Volcanic rock of Alum Hill, Emmons, No. 15.

Connecticut.

Holyoke folio, Emerson, No. 258.
Physiography, Davis, No. 200.
Triassic formation of Connecticut, Davis, No. 199.
Costa Rica.
Eastern section of Costa Rica, Sjögren, No. 703.
Fossil corals, Vaughan, No. 531.
Geological history of Panama and Costa Rica, Hill, No. 532.
Igneous rocks from Costa Rica, Wolff, No. 925.
Paleontology of collections, Dall, No. 186.

Cretaceous.
Classification.
Transition beds from Comanche to Dakota, Gould, No. 308.
Upper Cretaceous of Kansas, Adams, No. 7.
Correlation.
Upper Cretaceous formations, Clark, No. 152.
Greenland.
Cretaceous series of Greenland, White and Schuchert, No. 872.
Canada.
Cretaceous of Athabasca River, Tyrrell, No. 786.

Atlantic coast region.
Administrative report, Smock, No. 715.
Age of Amboy clay series, Hollick, No. 372.
Coastal plain of Maryland, Shattuck, No. 606.
Collections of N. Y. State Museum, Merrill, No. 647.
Cretaceous clay marl, Hollick, No. 870.
Geological notes, Hollick, No. 369.
Marine Cretaceous at Norfolk, Barton, No. 195.
Notes on Block Island, Hollick, No. 367.
Surface geology, Salisbury, No. 682.
Upper Cretaceous formations, Clark, No. 152.

Mississippian Valley.
Geological occurrence of clays, Keyes, No. 415.
Geology of Delaware County, Calvin, No. 123.
Geology of Guthrie County, Bain, No. 34.
Geology of Plymouth County, Bain, No. 37.
Minnesota so-called Cretaceous deposits, Sar- deson, No. 685.

Great Plains region.
Cone-in-cone, Harndy, No. 323.
Geological reconnaissance in Oklahoma, Ad- ama, No. 10.
Kansas physiography, Beede, No. 67.
Mentor beds, Jones, No. 395.
Transition beds from Comanche to Dakota, Gould, No. 306.
Underground waters of Nebraska, Darton, No. 194.
Upper Cretaceous of Kansas, Adams, No. 7.

Rocky Mountain region.
Belly River horizon, Knowlton, No. 453.
Cyanid horizons in Rocky Mountains, Marsh, No. 525.
Geology of Albuquerque, Herrick, No. 360.
Geology of Aspen mining district, Spurr, No. 739a.
Geology of San Pedro and Albuquerque dis- tricts, Herrick, No. 343.
Reconnaissance in northwestern South Da- kota, Todd, No. 770.
Section along Rapid Creek, Todd, No. 769.

Cretaceous—Continued.
Rocky Mountain region—Continued.
Upper Cretaceous section, Spencer, No. 724.
White River bad lands, Todd, No. 773.

Southwestern region.
Cement materials of Arkansas, Branner, No. 96.
Couches a Rudistes, Donville, No. 238.
Nueces folio, Hill and Vaughan, No. 357.
Texas oil horizons, Dumble, No. 241.

Pacific coast region.
Geology of southern coast ranges, Fairbanks, No. 292.
Roseburg folio, Diller, No. 235.

Cuba.
Cuba, Hill, No. 353.
Mineral resources of Cuba, Cabrera, No. 117.
[Mineral resources of Cuba], D'lnvilliers, No. 236.
Raised shore lines, Hershey, No. 345.

Devonian.

Nomenclature and classification.
Geology of Erie County, Grabau, No. 612.
Hamilton and Chemung series of New York, Prosser, No. 642.

Correlation.
Fauna of black shale, Girty, No. 299.
Ithaca and Portage groups, Clarke, No. 155.

Canada.

New England.
Holyoke folio, Emerson, No. 258.

New York.
Collections of New York State Museum, Mer- rill, No. 547.
Devonian shales, Ries, No. 659.
Geological conditions at Portage, Clarke, No. 134.
Geology of Erie County, Bishop, No. 89.
Geology of Erie County, Grabau, No. 312.
Geology of Onondaga County, Luther, No. 506.
Geology of Orange County, Ries, No. 658.
Geology of Seneca County, Lincoln, No. 490.
Hamilton and Chemung series of New York, Prosser, No. 642.
Ithaca and Portage groups, Clarke, No. 155.
Siluro-Devonian contact in western New York, Grabau, No. 311.
Stratigraphic position of Portage sandstones, Luther, No. 504.

Appalachian region.
Geology of Massanutten Mountain, Spencer, No. 725.
London folio, Campbell, No. 129.
Richmond folio, Campbell, No. 128.
Tazewell folio, Campbell, No. 127.

Mississippian Valley.
Corniferous rocks of Ohio, Bowner, No. 94.
Devonian crinoids and blastoids, Weller, No. 92.
Fucoids or coprolites, Udden, No. 789.
Geological formations of Cap-au-gres uplift, Keyes, No. 431.
Geological occurrence of clays, Keyes, No. 415.
Devonian—Continued.
Mississippi Valley—Continued.
Geological section across Indiana, Newsom, No. 575.
Geology of Boone County, Mo., Broadhead, No. 107.
Geology of Buchanan County, Calvin, No. 124.
Geology of Cerro Gordo County, Calvin, No. 121.
Geology of Delaware County, Calvin, No. 123.
Geology of Johnson County, Calvin, No. 120.
Geology of Lake and Porter counties, Blatchley, No. 89.
Limestones of Michigan, Sherzer, No. 699.
Report upon Greene County, Mo., Shepard, No. 608.
Rocky Mountain region.
Devonian in southwestern Colorado, Spencer and Girty, No. 725.
District of Columbia.
Physiographic development, McGee, No. 515.
Dynamic Geology.
Age of Niagara Falls, Wright, No. 307.
A geological romance, Udden, No. 793.
Champlain submergence, Fuller, No. 231.
Champlain submergence, Taylor, No. 739.
Changes of level in Mexico, Hull, No. 382.
Changes of level in Mexico, Spencer, No. 726.
Cincinnati Silurian island, Miller, No. 560.
Clay veins vertically intersecting coal measures, Gresley, No. 317.
Closing of Michigan glacial lakes, Smyth, No. 741.
Coal fields of Indian Territory, Drake, No. 529.
Composition of wind deposits, Udden, No. 792.
Compressed structure in Indiana, Ashley, No. 16.
Concentric weathering, Hopkins, No. 376.
Conditions affecting geyser eruptions, Jaggar, No. 391.
Declivities of high plateau and submarine valleys, Spencer, No. 731.
Deformation of rocks under pressure, Adams, No. 5.
Description of faulted region, Darton, No. 192.
Dike features of Gogebic lendege, Boss, No. 93.
Driftless region of Wisconsin, Squier, No. 740.
Earthquakes in California in 1896 and 1897, Perrine, No. 827.
Earthquake shocks in Giles County, Va., Campbell, No. 130.
Elevation of Glacial epoch, Spencer, No. 735.
Elevation of New England, Spencer, No. 728.
Estimates and causes of crustal shortening, Van Hise, No. 827.
Evolution of provincial faunas, Chamberlin, No. 146.
Experiments on flow of rocks, Adams and Nicolson, No. 6.
Faults, Williams, No. 884.
Fault structure in Indiana, Ashley, No. 17.
Formation of new ravines, Linton, No. 497.
Formations and changes of level in Jamaica, Spencer, No. 730.
Formations of Ottawa district, Ellis, No. 256.
Dynamic Geology—Continued.
Geographic development of Crimea, Keyes, No. 429.
Geographic development of District of Columbia, McGee, No. 515.
Geological formations of Cap-au-gres uplift, Keyes, No. 431.
Geological history of Panama and Costa Rica, Hill, No. 492.
Geological phenomena resulting from surface tension of water, Ladd, No. 459.
Geology and its relations to topography, Branner, No. 98.
Geology around Detroit, Taylor, No. 761.
Geology of Aspen mining district, Spurr, No. 752.
Geology of Calhoun sheet, Mo., Marbut, No. 518.
Geology of Cape Cod district, Shaler, No. 695.
Geology of Clinton County, Cushing, No. 182.
Geology of Helena, Mont., Griswold, No. 321.
Geology of Massanutten Mountain, Spencer, No. 729.
Geology of southern coast ranges, Fairbanks, No. 262.
Geothermal data from deep wells, Darton, No. 196.
Granite breccias of Cripple Creek, Stone, No. 751.
History of Jamesville Lake, Quereau, No. 648.
History of Niagara River, Spencer, Nos. 727, 732.
Hypotheses bearing on climatic changes, Chamberlin, No. 148.
Hypothesis to account for the movement in the crust of the earth, Powell, No. 612.
Igneous rocks of Sierra Nevada, Turner, No. 780.
Influence of geologic structure on topography, Lyonan, No. 506.
Influence of limestone formation upon the atmosphere, Chamberlin, No. 147.
Lake Superior copper deposits, Wadsworth, No. 839.
Lava flows of Sierra Nevada, Ransome, No. 549.
Lavas and soils of Hawaiian Islands, Maxwell, No. 539.
Les flions argentifères de Pachuca, Ordonez, No. 582.
Loess as a land deposit, Udden, No. 788.
London folio, Campbell, No. 129.
Metamorphism of rocks, Van Hise, No. 826.
Mountain structures of Pennsylvania, Chittenden, No. 151.
Natural arches of Kentucky, Miller, No. 561.
Natural bridge in Utah, Winslow, No. 925.
Niagara Gorge, Upham, No. 796.
Ohio Valley in southern Indiana, Veatch, No. 835.
Origin of gorge at Niagara, Taylor, No. 760.
Origin of loess, Keyes, No. 428.
Oscillations of Pacific coast, Blake, No. 81.
Physical features of United States, Gilbert, No. 294.
Dynamic Geology—Continued.

Physical geography of New Jersey, Salisbury, No. 681.
Physiography of southeastern Kansas, Adams, No. 9.
Pre-glacial decay of rocks, Chalmers, No. 140, 141.
Pre-glacial drainage in vicinity of Cincinnati, Powke, No. 276.
Pressure within the earth, Slichter, No. 704.
Raised shore lines in Cuba, Hershey, No. 345.
Recent earth movements in Great Lakes region, Gilbert, No. 239.
Recent warpings, Goodrich, No. 394.
Report upon Greene County, Mo., Shepard, No. 698.
Rocks of Laurentian system, Adams, No. 2.
Rocks, rock weathering, and soils, Merrill, No. 552.
Seismic disturbances in Nicaragua, Crawford, No. 169.
Sierra Nevada fault scarp, Fairbanks, No. 263.
Subterranean temperatures at Wheeling, Hall, No. 292.
Tarryville folio, Emmons, No. 239.
Terrace cutting of the Potomac, Abbe, No. 754.
The Ozark Uplift, Broadhead, No. 108.
The peneplain, Tarr, No. 754.
Time erosion of Upper Mississippi, Upham, No. 824.
Triassic formation of Connecticut, Davis, No. 199.
Volcanic craters, Lakes, No. 462.
Wave-formed cuspate forelands, Tarr, No. 755.
Weathering of diabase, Watson, No. 853.
West Indian bridge, Spencer, No. 786.

Economic Geology.

General.
Abrasivo materials, Parker, No. 598.
Clay veins vertically intersecting coal measures, Gresley, No. 317.
Clay-working industries, Rice, No. 690.
Coal deposits of trans-Mississippian field, Keyes, No. 433.
Composition of wind deposits, Udden, No. 792.
Crushed quartz and its source, Fuller, No. 282.
Degradation of loess, Todd, No. 768.
Genesis of bitumens, Pockham, No. 615.
Geological probabilities as to petroleum, Orton, No. 584.
Gold mining in southern Appalachians, Nitze and Wilkeus, No. 579.
Iron ores, Birkinbine, No. 78.
In the loess of aqueous origin, Shimok, No. 700.
Lake Superior iron-ore region, Winchell, No. 913.
Loess as a land deposit, Udden, No. 788.
Minerals which accompany gold, Rickard, No. 637.
Occurrence and associates of telluride ores, Kemp, No. 413.
Occurrence of ore chutes, Kirby, No. 441.

Economic Geology—Continued.

General—Continued.
Occurrence, origin, and composition of chromite, Pratt, No. 636.
Onyx marbles, DeKalb, No. 231.
Petroleum, Oliphant, No. 580.
Pittsburgh coal bed, White, No. 873.
Remarks on loess, Sardeson, No. 688.
Stone, Day, No. 227.
Wittwatersrand banket, Becker, No. 57.

Alabama.
Alabama gold mining, Smith, No. 705.
Brown ore deposit, Phillips, No. 626.
Clay resources, Smith, No. 706.
Iron ores, Birkinbine, No. 78.
Stone industry, Smith, No. 707.

Alaska.
Country of the Klondike, Dunn, No. 242.
Gold fields of southern Alaska, Becker, No. 56.

Map of Alaska, Emmons, No. 280.

Arizona.
Anthracite coal in Arizona, Blake, No. 52.
Copper industry of Arizona, Douglas, No. 237.
Mining in Yavapai County, Blundy, No. 87.
Wolframite in Arizona, Blake, No. 46.

Arkansas.
Bonanza Arkansas coal mines, Bain, No. 44.
Cement materials of Arkansas, Branner, No. 96.

California.
Auriferous conglomerate of Transvaal, Becker, No. 58.
Bidwell Bar folio, Turner, No. 776.
Bituminous rock deposit, Cooper, No. 164.
Bituminous rock deposits, Fairbanks, No. 264.
Buried rivers as a source of gold, Scupham, No. 693.
Gold formations, Storms, No. 752.
Mother lode, Browne, 113.

Platinum, Day, No. 228.
Primary gold deposits of Sierra Nevada, Lindgren, No. 495.
Southern California petroleum, Cooper, No. 165.

Tea coal mines, Horsewill, No. 379.

Canada.
Boundary and Trail Creek, Austin, No. 20.
Copper mining at Kamoops, Wade, No. 838.
Geology of French River sheet, Bell, No. 68.
Gold-bearing deposits of Quebec, Chalmers, No. 142.
Gold-bearing lodes, Moncton, No. 568.
Gold-bearing placers, Merritt, No. 557.
Harrison Lake, Brewer, No. 99.
Lillooet River and Squamish trail, Brewer, No. 194.
Manganese deposits, Jennison, No. 394.
Michicoten gold field, Wilmot, No. 699.
Mining districts in British Columbia, Hardman, No. 331.
Mining in British Columbia, Moncton, No. 567.
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada—Continued.</strong></td>
<td><strong>Indiana.</strong></td>
</tr>
<tr>
<td>Mining operations, Carlyle, No. 132.</td>
<td>Bedford limestone, Siebenhal, No. 701.</td>
</tr>
<tr>
<td>Mispickel gold ores, Wells, No. 568.</td>
<td>Clays of Indiana, Blatchley, No. 89.</td>
</tr>
<tr>
<td>Pemberton Meadows and the Blackwater Brewer, No. 103.</td>
<td><strong>Indian Territory.</strong></td>
</tr>
<tr>
<td>Prospecting on Lillooet, Brewer, No. 102.</td>
<td><strong>Iowa.</strong></td>
</tr>
<tr>
<td>Rossland, Brewer, No. 101.</td>
<td>Geology of Buchanan County, Calvin, No. 124.</td>
</tr>
<tr>
<td>Sandon district, Brewer, No. 100.</td>
<td>Geology of Cerrro Gordo County, Calvin, No. 121.</td>
</tr>
<tr>
<td>Western Ontario gold fields, Coleman, No. 163.</td>
<td>Geology of Decatur County, Bain, No. 36.</td>
</tr>
<tr>
<td>Western Ontario gold fields, Hille, No. 358.</td>
<td>Geology of Delaware County, Calvin, No. 123.</td>
</tr>
<tr>
<td><strong>Colorado.</strong></td>
<td><strong>Geology of Guthrie County, Bain, No. 34.</strong></td>
</tr>
<tr>
<td>Anthracite in the Rockies, Hosea, No. 380.</td>
<td><strong>Geology of Johnson County, Calvin, No. 120.</strong></td>
</tr>
<tr>
<td>Clays of Colorado, Rica, No. 663.</td>
<td><strong>Geology of Madison County, Tilton and Bain, No. 768.</strong></td>
</tr>
<tr>
<td>Dike on Columbia vein, Palmer and Stoddard, No. 597.</td>
<td><strong>Geology of Marshall County, Beyer, No. 76.</strong></td>
</tr>
<tr>
<td><strong>El Paso coal field, Lakes, No. 466.</strong></td>
<td><strong>Geology of Plymouth County, Bain, No. 37.</strong></td>
</tr>
<tr>
<td><strong>Flourine mine, Lakes, No. 467.</strong></td>
<td><strong>Geology of Polk County, Bain, No. 33.</strong></td>
</tr>
<tr>
<td><strong>Geology of Aspen, Lakes, No. 460.</strong></td>
<td><strong>Iowa building stones, Bain, No. 38.</strong></td>
</tr>
<tr>
<td><strong>Geology of Aspen mining district, Spurr, No. 739a.</strong></td>
<td><strong>Kansas.</strong></td>
</tr>
<tr>
<td><strong>Mines of La Plata Mountains, Petre, No. 625.</strong></td>
<td><strong>Drill hole at Wichita, Mead, No. 541.</strong></td>
</tr>
<tr>
<td>Mining industries of Telluride quadrangle, Purington, No. 644.</td>
<td><strong>Gypsum deposits of Kansas, Grinsley, No. 320.</strong></td>
</tr>
<tr>
<td><strong>Ore occurrence in Red Mountain, Lakes, No. 468.</strong></td>
<td><strong>Gypsum in Kansas, Grimsley, No. 318.</strong></td>
</tr>
<tr>
<td><strong>Ores of Vulcan mine, Lakes, No. 471.</strong></td>
<td><strong>Kansas Coal Measures, Crane, No. 167.</strong></td>
</tr>
<tr>
<td>Peculiar ore body, Lakes, No. 470.</td>
<td><strong>Mineral resources of Kansas, Haworth, No. 336.</strong></td>
</tr>
<tr>
<td>Rosita and Silver Cliff, Lakes, No. 465.</td>
<td><strong>Kentucky.</strong></td>
</tr>
<tr>
<td><strong>Silver Cliff district, Lakes, No. 461.</strong></td>
<td><strong>Clays and building stones of Kentucky, Crump, No. 177.</strong></td>
</tr>
<tr>
<td>Silver Pick mine, Spaulding, No. 722.</td>
<td><strong>London folio, Campbell, No. 129.</strong></td>
</tr>
<tr>
<td>Telluride ores, Lakes, No. 464.</td>
<td><strong>Clays of Louisiana, Clendenin, No. 109.</strong></td>
</tr>
<tr>
<td>Telluride veins in La Plata Mountains, Austin, No. 23.</td>
<td><strong>Maryland.</strong></td>
</tr>
<tr>
<td>Tellurium and the telluride ores, Lakes, No. 469.</td>
<td><strong>Maryland building stones, Mathews, No. 531.</strong></td>
</tr>
<tr>
<td>Tennmile folio, Emmons, No. 259.</td>
<td><strong>Properties of building stones, Morrill, No. 553.</strong></td>
</tr>
<tr>
<td>Vein structure in Enterprise mine, Rickard, No. 656.</td>
<td><strong>Massachusetts.</strong></td>
</tr>
<tr>
<td>Volcanic craters, Lakes, No. 462.</td>
<td><strong>Building and road stones, Whittle, No. 881.</strong></td>
</tr>
<tr>
<td>Volcanic rock of Alum Hill, Andrews, No. 15.</td>
<td><strong>Clays of Massachusetts, Whittle, No. 880.</strong></td>
</tr>
<tr>
<td>Cuba.</td>
<td><strong>Holyoke folio, Emerson, No. 258.</strong></td>
</tr>
<tr>
<td>Mineral resources of Cuba, Cabrera, No. 117.</td>
<td><strong>Mexico.</strong></td>
</tr>
<tr>
<td><strong>Georgia.</strong></td>
<td>A mineralized dike, Brown, No. 112.</td>
</tr>
<tr>
<td>Gold deposits of Georgia, Yeates, McCallie and King, No. 941.</td>
<td>Les filons argentifères de Pachuca, Ordones, No. 582.</td>
</tr>
<tr>
<td>Gold mining in Georgia, Tatham, No. 758.</td>
<td><strong>Native sodium carbonate, Blake, No. 85.</strong></td>
</tr>
<tr>
<td>Phosphates and marls, McCallie, No. 510.</td>
<td><strong>New copper deposit, Lakes, No. 503.</strong></td>
</tr>
<tr>
<td><strong>Greenland.</strong></td>
<td><strong>Michigan.</strong></td>
</tr>
<tr>
<td><strong>Idaho.</strong></td>
<td>Iron ore, Birkinbine, No. 78.</td>
</tr>
<tr>
<td>Boise folio, Lindgren, No. 492.</td>
<td><strong>Lake Superior copper deposits, Wadsworth, No. 859.</strong></td>
</tr>
<tr>
<td>Gold ore deposits of Mount Caribou, Kirby, No. 440.</td>
<td><strong>Marquette range, Jopling, No. 398.</strong></td>
</tr>
<tr>
<td>Mining districts of Idaho Basin, Lindgren, No. 491.</td>
<td><strong>Minnesota.</strong></td>
</tr>
<tr>
<td>Mount Caribou gold deposits, Lakes, No. 472.</td>
<td><strong>Geology of Mesabi Range, Grant, No. 314.</strong></td>
</tr>
<tr>
<td>Illinois.</td>
<td><strong>Missouri.</strong></td>
</tr>
<tr>
<td>New well at Rock Island, Udden, No. 790.</td>
<td><strong>Clay deposits, Wheeler, No. 869.</strong></td>
</tr>
</tbody>
</table>
Economic Geology—Continued.

Missouri—Continued.

Geological occurrence of clays, Keyes, No. 415.
Geology of Calhoun sheet, Mo., Marbut, No. 518.
Geology of Clinton sheet, Mo., Marbut, No. 517.
Geology of Huntsville quadrangle, Mo., Marbut, No. 521.
Geology of Richmond quadrangle, Mo., Marbut, No. 520.
Lead and zinc ores, Hedburg, No. 339.
Report upon Greene County, Mo., Shepard, No. 698.
Tripoli deposits, Quimby, No. 646.

Montana.

Gold nugget from Montana, Pearce, No. 612.

Nebraska.

Ash beds of Great Plains, Barbour, No. 49.
Underground waters, Barton, No. 194.

Nevada.

Carbonate of soda deposits, Knapp, No. 443.

Newfoundland.

Chromite deposits, Maynard, No. 540.

New Jersey.

Artesian wells in New Jersey, Woolman, No. 933.
Newark system, Künmmel, No. 456.

New Mexico.

Copper deposits of Mora County, Austin, No. 19.
Occurrence of copper and lead, Herrick, No. 341.

New York.

Collections of New York State Museum, Merrill, No. 547.
Devonian shales, Ries, No. 659.
Geology of Erie County, Bishop, No. 80.
Geology of Essex County, Kemp, No. 405.
Geology of Onondaga County, Luther, No. 505.
Geology of Orange County, Ries, No. 658.
Geology of Saratoga County, Lincoln, No. 490.
Limestones of central New York, Schneider, No. 659.
Magnesite area near Port Henry, Kemp, No. 402.
Tests of New York shales, Ries, No. 666.
Titaniferous magnesites, Kemp, No. 409.

North Carolina.

Clay deposits, Ries, No. 601.
Corundum mining, Stone, No. 750.

North Dakota.

Geothermal data from deep wells, Darton, No. 196.

Ohio.

Geology of Jackson County coal, Roy, No. 670.

Oregon.

Gold mining in Oregon, Barrall, No. 51.
Nickel deposits near Riddles, Austin, No. 21.
Roseburg folio, Diller, No. 205.
Pennsylvania.

Blossburg coal region, Hardt, No. 332.

Economic Geology—Continued.

Pennsylvania—Continued.

Copper traces, Lyman, No. 597.
Fire clays, Hopkins, No. 378.
Slate regions of Pennsylvania, Merrim, No. 555.

South Dakota.

Clay and stone resources, Todd, No. 774.
Fuller's earth of South Dakota, Ries, No. 662.
Geothermal data from deep wells, Darton, No. 196.
Main artesian basin, Todd, No. 772.
Northern Black Hills, Etraer, No. 277.
Occurrence of tellurium, Pearce, No. 606.
Potsdam gold ores, Smith, No. 708.
Reconnaissance in northwestern South Dakota, Todd, No. 770.
Section along Rapid Creek, Todd, No. 769.
White River bad lands, Todd, No. 773.

Tennessee.

Phosphate rock deposits, Brown, No. 111.
Tennessee phosphates, Kibele, No. 438.

Texas.

Nueces folio, Hill and Vaughan, No. 357.
Oil fields of Texas, Miller, No. 502.
Texas oil horizons, DuBoui, No. 541.

Utah.

Gold mines of Mercur, Maguire, No. 516.
Virginica.

Manganese ores, Birkinbine, No. 79.
Tazewell folio, Campbell, No. 127.

Washington.

Coal fields of Puget Sound, Willis, No. 894.
Den Free lode, Landaas, No. 475.
Genesa of iron ores, Kimball, No. 437.
Republic mines, Joseph, No. 400.
Stratigraphy and structure of Puget group, Willis, No. 895.

West Indies.

Barbados manjak, Merrivak, No. 558.
Occurrence of manjak, Merivale, No. 544.

West Virginia.

Tazewell folio, Campbell, No. 127.

Wyoming.

Building stones and clays of Wyoming, Knight, No. 447.
Soda deposits of Wyoming, Knight, No. 448.
Wyoming copper region, Kennedy, No. 414.
Wyoming oil fields, Lakes, No. 473.

Economic products described.

Abrasive materials, Barbour, No. 49.
Abrasive materials, Fuller, No. 282.
Abrasive materials, Parker, No. 598.
Artesian water, Hill and Vaughan, No. 357.
Artesian water, Udden, No. 700.
Artesian water, Woolman, No. 933.
Artesian wells, Bishop, No. 80.
Artesian wells, Blatchley, No. 88.
Artesian wells, Darton, Nos. 194, 196.
Artesian wells, Mead, No. 541.
Artesian wells, Smock, No. 715.
Artesian wells, Todd, No. 772.
Asphalt, Merivale, No. 544.
Asphaltum, Cabrera, No. 117.
Asphaltum, Lee, No. 479.
Economic Geology—Continued.

Economic products described—Continued.

Asphaltum, Merrivak, No. 558.
Bitumen, Cooper, No. 164.
Bitumen, Fairbanks, No. 264.
Bitumen, Peckham, No. 615.
Building stone, Bain, Nos. 36, 38.
Building stone, Benedict, No. 71.
Building stone, Beyer, No. 76.
Building stone, Bishop, No. 80.
Building stone, Calvin, Nos. 120, 121, 123, 124.
Building stone, Crump, No. 127.
Building stone, Day, No. 227.
Building stone, Diller, No. 235.
Building stone, Emerson, No. 259.
Building stone, Foerste, No. 437.
Building stone, Hammel, No. 456.
Building stone, Lee, No. 479.
Building stone, Leonard, No. 483.
Building stone, Lincoln, No. 490.
Building stone, Lindgren, No. 492.
Building stone, Luther, No. 505.
Building stone, Marbut, Nos. 517, 518, 519, 520, 521.
Building stone, Merrill, No. 553.
Building stone, Mathews, No. 551.
Building stone, Ries, No. 658.
Building stone, Shepard, No. 698.
Building stone, Siebenthal, No. 701.
Building stone, Smith, No. 707.
Building stone, Tilton and Bain, No. 708.
Building stone, Todd, No. 744.
Building stone, Whittle, No. 881.
Cement, Bain, No. 37.
Cement, Braner, No. 96.
Cement, Diller, No. 235.
Cement, Luther, No. 505.
Chalk, Bain, No. 37.
Chromite, Maynard, No. 540.
Clay, Bain, Nos. 33, 34, 36, 37.
Clay, Beyer, No. 76.
Clay, Blatchley, No. 88.
Clay, Calvin, Nos. 121, 123.
Clay, Clendenin, No. 160.
Clay, Crump, No. 177.
Clay, Emerson, No. 258.
Clay, Knight, No. 447.
Clay, Lee, No. 479.
Clay, Leonard, No. 483.
Clay, Lincoln, No. 490.
Clay, Marbut, Nos. 517, 518, 519, 520, 521.
Clay, Ries, Nos. 658, 659, 660, 661.
Clay, Shepard, No. 698.
Clay, Smith, No. 706.
Clay, Todd, No. 744.
Clay, Wheeler, No. 869.
Clay, Whittle, No. 880.
Coal, Bain, Nos. 33, 34, 36, 37, 44.
Coal, Blake, No. 82.
Coal, Campbell, Nos. 127, 129.
Coal, Crane, No. 167.
Coal, Diller, No. 235.
Coal, Drake, No. 239.
Coal, Emmons, No. 260.
Coal, Hardt, No. 332.
Economic Geology—Continued.

Economic products described—Continued.

Gold, Parington, No. 644.
Gold, Scuphani, No. 693.
Gold, Smith, Nos. 705, 708.
Gold, Storms, No. 752.
Gold, Spurr, No. 739a.
Gold, Tatham, No. 758.
Gold, Turner, No. 776.
Gold, Wells, No. 868.
Gold, Willmot, No. 909.
Gold, Yeates, McCallie, and King, No. 941.
Gypsum, Grimsley, Nos. 318, 320.
Gypsum, Haworth, No. 336.
Gypsum, Lee, No. 479.
Gypsum, Luther, No. 505.
Iron, Bailey, No. 30.
Iron, Birkinbine, Nos. 78, 79.
Iron, Cabrera, No. 117.
Iron, Grant, No. 314.
Iron, Jopling, No. 398.
Iron, Kemp, Nos. 403-405.
Iron, Kimball, No. 437.
Iron, Lee, No. 479.
Iron, Phillips, No. 626.
Iron, Ries, No. 636.
Iron, Shepard, No. 698.
Iron, Winschall, No. 613.
Lead, Brewer, No. 340.
Lead, Gilpin, No. 297.
Lead, Haworth, No. 336.
Lead, Hedburg, No. 339.
Lead, Herrick, No. 341.
Lead, Lakes, No. 463.
Lead, Lee, No. 479.
Lead, Shepard, No. 698.
Lime, Marbut, Nos. 517, 518.
Lime, Shepard, No. 698.
Limestone, Day, No. 227.
Lesseps, Beyer, No. 76.
Manganese, Cabrera, No. 117.
Manganese, Jennison, No. 394.
Nickel, Austin, No. 21.
Nickel, McCharles, No. 513.
Nickel, Miller, No. 563.
Nickel, Turner, No. 778.
Natural gas, Bain, No. 34.
Natural gas, Bishop, No. 80.
Natural gas, Haworth, No. 336.
Natural gas, Leonard, No. 483.
Natural gas, Lincoln, No. 490.
Natural gas, Orton, No. 584.
Oxford marble, DaKahl, No. 231.
Petroleum, Blatchley, No. 90.
Petroleum, Cooper, No. 165.
Petroleum, Dumble, No. 241.
Petroleum, Haworth, No. 536.
Petroleum, Lakes, No. 473.
Petroleum, Miller, No. 592.
Petroleum, Oliphant, No. 580.
Petroleum, Orton, No. 584.
Phosphate, Brown, No. 111.
Phosphate, Killbrew, No. 438.
Phosphate, McCallie, No. 510.
Platinum, Day, No. 226.

Economic Geology—Continued.

Economic products described—Continued.

Road material, Bain, No. 33.
Road material, Benedict, No. 71.
Road material, Calvin, No. 123.
Road material, Leonard, No. 486.
Road material, Lincoln, No. 490.
Road material, Marbut, No. 517.
Road material, Rivers, No. 658.
Road material, Shepard, No. 698.
Road material, Tilton and Bain, No. 766.
Road material, Whipple, No. 881.
Salt, Haworth, No. 336.
Salt, Luther, No. 505.
Sandstone, Day, No. 227.
Silver, Austin, No. 30.
Silver, Blandy, No. 87.
Silver, Brewer, Nos. 100, 101.
Silver, Carlyle, No. 132.
Silver, Emmons, No. 259.
Silver, Gwillim, No. 324.
Silver, Hardman, No. 331.
Silver, Joseph, No. 400.
Silver, Lakes, Nos. 461, 463, 468.
Silver, Lee, No. 479.
Silver, Ordones, No. 582.
Silver, Petro, No. 623.
Silver, Parington, No. 644.
Silver, Spurr, No. 739a.
Slate, Day, No. 227.
Slate, Merriman, No. 555.
Soda, Blake, No. 85.
Soda, Knapp, No. 443.
Soda, Knight, No. 448.
Talc, Smyth, Nos. 710, 721.
Titaniferous magnetite, Kemp, No. 400.
Tripoli, Quimby, No. 646.
Water supply, Bain, No. 34.
Wolframite, Blake, No. 86.
Zinc, Haworth, No. 336.
Zinc, Hedburg, No. 339.
Zinc, Shepard, No. 698.

Florida.

Contributions to Tertiary fauna of Florida, Dall, Nos. 183, 184.
Fossil vertebrates from Alachua clay, Leidy, No. 481.
Notes on artesian well at Key West, Hovey, No. 3809.

Geologic Formations Described.

Aftonian, Bain, No. 40.
Alfomian, Beyer, No. 76.
Alachua clay, Leidy, No. 481.
Albany division, Cummins, No. 180.
Albany shale, Rutherford, No. 680.
Altamont moraine, Beyer, No. 70.
Anadarko outlier, Calvin, No. 120.
Anchialine clay series, Holbrook, Nos. 267, 272.
Amherst feldspathic mica-schist, Emerson, No. 252.
Anomia lime, Calvin, No. 120.
Anomia lime, Calvin, No. 120.
Ateban series, White and Schuchert, No. 872.
Atalbhacan sandstone, Tylor, No. 784.
Atlantosaurus beds, Marsh, No. 524.
Geologic Formations Described—Continued.

Auburn shale, Beede, No. 65.
Augusta, Beyer, No. 76.
Augusta, Keyes, Nos. 423, 425.
Augusta limestone, Marbut, Nos. 517, 518, 521.
Augusta limestone, Shepard, No. 698.
Augusta, Weller, No. 867.
Auriferous gravels, Merrim, No. 545.
Auriferous gravel series, Turner, No. 776.
Barbacoa formation, Hill, No. 352.
Baptanodon beds, Marsh, No. 524.
Barnstable series, Shaler, No. 695.
Bashi, Harris, No. 534.
Batesville sandstone, Drake, No. 239.
Batesville sandstone, Weller, No. 860.
Bays sandstone, Campbell, No. 127.
Beacon Hill formation, Salisbury, No. 682.
Bearwallow conglomerate, Campbell, No. 127.
Becket gneiss, Emerson, No. 258.
Bed rock series, Turner, No. 776.
Belchertown tonalite, Emerson, No. 258.
Bells Landing, Harris, No. 334.
Bellvale flags, Rice, No. 658.
Belly River beds, Knowlton, No. 453.
Benton, Bain, No. 57.
Benton, Darton, No. 194.
Becket gneiss, Emerson, No. 258.
Birch Creek series, Emmons, No. 260.
Black River, Ells, No. 256.
Blackrock diabase, Emerson, No. 258.
Black shale, Girty, No. 299.
Black shale, Keyes, No. 415.
Black shale, Shepard, No. 698.
Bluefield shale, Campbell, No. 127.
Bluestone formation, Campbell, No. 127.
Boone chert, Drake, No. 239.
Border conglomerate, Kümmel, No. 456.
Boston group, Drake, No. 239.
Bowling Green limestone, Keyes, No. 431.
Breathitt formation, Campbell, No. 129.
Bridger group, Osborn, No. 585.
Bridgeton formation, Salisbury, No. 682.
Brunswick beds, Kümmel, No. 456.
Bryant limestone, Keyes, No. 431.
Buchanan, Beyer, No. 76.
Buchanan, Leverett, No. 487.
Buchanan gravel, Calvin, Nos. 121, 123, 124, 125.
Buffalo shale, Keyes, No. 431.
Bujiro formation, Hill, No. 352.
Burlingame limestone, Haworth, No. 335.
Burlingame shale, Beede, No. 65.
Burlington formation, Marbut, No. 521.
Burlington limestone, Lower, Shepard, No. 698.
Burlington limestone, Upper, Shepard, No. 698.
Calaveras formation, Turner, No. 776.
Calciferous, Cushig, No. 182.
Calciferous, Eila, No. 258.
Calhoun limestone, etc., Beede, No. 65.
Callaway limestone, Keyes, Nos. 415, 431.
Geologic Formations Described—Continued.
Cap-au-gres sandstone, Keyes, No. 431.
Cape Cod series, Shaler, No. 695.
Cape May formation, Salisbury, No. 682.
Cavanal group, Drake, No. 239.
Cedar formation, Turner, No. 776.
Cedar Valley stage, Calvin, Nos. 120, 121, 124.
Ceratops beds, Marsh, No. 523.
Chalk Mountain nevadite, Emmons, No. 399.
Chattanooga shale, Campbell, Nos. 128, 129.
Chazy, Bell, No. 68.
Chazy, Cushig, No. 182.
Chazy, Eila, No. 658.
Cheungch, No. 127.
Cheungch group, Luther, No. 505.
Cheungch series, Prosser, No. 642.
Cherokee shale, Crane, No. 167.
Cherokee shale, Marbut, Nos. 517, 518, 520.
Cherokee shales, Haworth, No. 335.
Cherokee shales, Keyes, No. 435.
Cherryville shale, Haworth, No. 335.
Chesire quartzite, Emmons, No. 253.
Chester amphibolite, Emerson, No. 258.
Cheyenne sandstones, Gould, No. 308.
Chickenmung limestone, Campbell, No. 127.
Chico formation, Fairbanks, No. 262.
Chicopee shale, Emerson, No. 258.
Chocolate limestone, Beede, No. 65.
Chouteau limestone, Shepard, No. 698.
Churchill sandstone, Turner, No. 784.
Cimarron series, Adams, No. 10.
Cimarron series, Jones, No. 397.
Clairwater shale, Turner, No. 786.
Clinch sandstone, Campbell, No. 127.
Clinton, Bell, No. 68.
Clinton, Eila, No. 658.
Clinton, Leverett, No. 487.
Clinton limestone, Foerste, No. 273.
Clinton limestone, Blatchley and Ashley, No. 92.
Clinton shale, Luther, No. 505.
Coal Measures, Drake, No. 239.
Coal Measures, Keyes, No. 418.
Costsacacolac formation, Spencer, No. 726.
Colorado, Bain, No. 37.
Colorado formation, Todd, Nos. 769, 773.
Colorado formation, Spurr, No. 739a.
Columbia formation, Spencer, Nos. 726, 730.
Comanche Peak formation, Hill and Vaughan, No. 597.
Comanche series, Gould, No. 308.
Cono group, Knight, No. 416.
Conodond bed, Grabau, No. 312.
Conway schist, Emerson, No. 258.
Corbin conglomerate lentil, Campbell, Nos. 128, 129.
Corniferous conglomerate, Campbell, Nos. 128, 129.
Corniferous limestone, Bishop, No. 80.
Corniferous limestone, Luthcr, No. 505.
Cottonwood limestone, Keyes, No. 424.
Couchiching, Coleman, No. 161.
Crosswicks clay, Clark, No. 152.
Crystal sandstone, Keyes, No. 415.
Cutchua beds, Osborn, No. 585.
Culebra clay, Hill, No. 352.
Dakota, Bain, Nos. 34, 37.
Dakota, Darton, No. 194.
Geologic Formations Described—Continued.

Dakota formation, Spurr, No. 739a.
Dakota formation, Todd, No. 769.
Dakota group, Gould, No. 368.
Dakota sandstone, Beede, No. 67.
Dakota sandstone, Marsh, No. 254.
Deer Creek limestone, Haworth, No. 235.
De Kalb limestone, Bain, No. 39.
Delaware stage, Calvin, No. 123.
Del Rio clay, Hill and Vaughan, No. 387.
Des Moines, Bain, Nos. 34, 36, 39.
Des Moines, Keyes, No. 415.
Des Moines, Leonard, No. 483.
Des Moines, Tilton and Bain, No. 766.
Des Moines series, Keyes, Nos. 415, 418, 430.
Des Moines stage, Beyer, No. 76.
Des Moines stage, Calvin, No. 120.
Des Moines stage, Marbut, Nos. 520, 521.
Dienal formation, Campbell, No. 127.
Dolostone sandstone, Campbell, No. 127.
Dowry gravel, Willis, No. 698.
Dover shale and sandstone, Beede, No. 65.
Dresbach shale, Becker, No. 74.
Dundee limestone, Sherrrer, No. 699.
Eastman limestone, Bain, No. 39.
Earlton limestone, Haworth, No. 335.
Edwards formation, Hill and Vaughan, No. 357.
Ekmont limestone, Beede, No. 65.
Egin sandstone, Haworth, No. 235.
Elk Falls limestone, Haworth, No. 235.
Elk Mountain porphyry, Emmons, No. 259.
Empire limestone, Bugg, No. 26.
Empire limestone, Dall, No. 186.
Empire limestone, Hill, No. 322.
Encinal limestone, Grabau, No. 312.
Equus beds, Williston, No. 900.
Erie limestone, Haworth, No. 335.
Esopus, Ries, No. 658.
Eureka limestone, Haworth, No. 335.
Eureka shale, Drake, No. 239.
Eureka shale, Shepard, No. 698.
Fayette breccia, Calvin, Nos. 120, 124.
Fayetteville shale, Drake, No. 239.
Flathead quartzite, Griswold, No. 321.
Flanagan chert, Campbell, No. 128.
Florencia formation, Pilsbry, No. 628.
Folley limestone, Keyes, No. 415.
Forty mile series, Emmons, No. 259.
Franciscan series, Turner, No. 777.
Franconia sandstone, Berkey, No. 74.
Franklin white limestone, Wolff and Brooks, No. 524.
Friedrichtown dolomite, Keyes, No. 415.
Galena limestone, Blatchley and Ashley, No. 92.
Galena series, Sardeson, No. 686.
Gallatin, Griswold, No. 321.
Garnett limestone, Haworth, No. 335.
Garrard sandstone, Campbell, No. 128.
Geologic Formations Described—Continued.
Iola limestone, Keyes, No. 424.
Iowa, Calvin, No. 124.
Iowan, Beyer, No. 76.
Iowan, Calvin, No. 123.
Iowan drift, Calvin, Nos. 120, 121.
Iowan loess, Bryan, No. 34.
Iowan loess, Leverett, No. 487.
Iowan loess, Pillsbury, No. 628.
Irvine formation, Campbell, No. 128.
Ithaca group, Clarke, No. 125.
Jennings shale, Spencer, No. 726.
Jordan sandstone, Berke, No. 74.
Kansas, Bryan, No. 40.
Kansas, Beyer, No. 78.
Kansas, Calvin, No. 123.
Kansas, Fitpatrick, No. 272.
Kansas drift, Bryan, Nos. 120, 121.
Kansas drift, Williams, No. 386.
Kansas drift, Leonard, No. 383.
Kansas, Calvin, No. 124.
Kansas till, Leverett, No. 488.
Kawashin, Winchell, No. 918.
Keevatn, Coleman, No. 161.
Keevatn, Winchell, No. 918.
Kensal series, Emmens, No. 260.
Kokotuk group, Broadhead, No. 167.
Keweenaw series, Elftman, No. 250.
Keweenaw series, Wadsworth, No. 839.
Kimberling chalpe, Campbell, No. 127.
Kingboro, Beyer, No. 76.
Kinderhook, Calvin, No. 121.
Kinderhook limestone, Marbut, No. 518.
King limestone, Shepard, No. 988.
Kiowa shale, Gould, No. 308.
Kirby clays, Gould, No. 308.
Knobstone, Jones, No. 308.
Knobstone group, Bennett, No. 72.
Knobstone group, Newsom, No. 576.
Knobstone group, Price, No. 641.
Knok dolomite, Campbell, No. 127.
Knoxville beds, Fairbanks, No. 262.
Kome series, White and Schuchert, No. 872.
Labette chalpe, Crane, No. 167.
Labette shales, Haworth, No. 335.
Lafayette formation, Spencer, No. 726.
Lafayette series, Spencer, No. 730.
La Motte sandstone, Keyes, No. 415.
Lane shales, Haworth, No. 335.
Landsdale shale, Lyman, No. 597.
Laramie, Todd, No. 770.
Laramie formation, Spurr, No. 739a.
Laurel limestone, Foerste, No. 273.
Laurentian, Bell, No. 68.
Laurentian, Coleman, No. 161.
Laurentian, Ellis, No. 253.
Laurentian, Low, No. 500.
Lawrence shale, Crane, No. 167.
Lawrence shale, Haworth, No. 335.
Lawrence shale, Keyes, No. 424.
Layton formation, Spencer, No. 726.
Leadville limestone, Emmens, No. 259.
Leadville limestone, Spurr, No. 739a.
Le Claire limestone, Calvin, No. 120.
Geologic Formations Described—Continued.
Lecompton shale, Haworth, No. 335.
Led clay, Wilson, No. 912.
Lee formation, Campbell, Nos. 128, 129.
Le Grand beds, Beyer, No. 76.
Leona formation, Hill & Vaughan, No. 357.
Le Searl limestone, Keyes, No. 415.
Lehi town limestone, Spencer, No. 723.
Lexington limestone, Campbell, No. 128.
Leyden argillite, Emerson, No. 258.
Lignite stage, Harris, No. 334.
Liguanea formation, Spencer, No. 730.
Limous beds, Hill, No. 352.
Lime Creek chalpe, Calvin, No. 121.
Lincoln porphyry, Emmens, No. 256.
Lockatong series, Kümmel, No. 456.
Loess, Bryan, No. 35, 36.
Loess, Calvin, Nos. 120, 124.
Loess, Keyes, No. 428.
Loess, Leonard, No. 483.
Loess, Sardesou, No. 687.
Loess, Shimek, No. 700.
Loess, Todd, No. 768.
Loess, Udden, Nos. 783, 792.
Longmeadow sandstone, Emerson, No. 258.
Louisiana limestone, Keyes, No. 431.
Louisiana limestone, Shepard, No. 698.
Louisville limestone, Foerste, No. 273.
Loup Fork beds, Todd, Nos. 770, 773.
Lower Holdenberg, Blatchley, No. 88.
Lower Holdenberg, Blatchley and Ashley, No. 92.
Lower Holdenberg, Ries, No. 658.
Lower Holdenberg group, Lincoln, No. 490.
Lower Holdenberg group, Luther, No. 665.
Loweres quartzite, Merrill, No. 548.
Mcallister coal group, White, No. 871.
McCune limestone, Keyes, No. 431.
McHenry formation, Uhler, No. 794.
McNulty rhyolite, Emmens, No. 259.
Madison limestone, Griswold, No. 321.
Magnesian limestone, Blatchley and Ashley, No. 92.
Magnesian limestone, Keyes, No. 415.
Magnesian limestone, Marbut, No. 518.
Magnesian limestone, Shepard, No. 698.
Manasquan formation, Clark, No. 152.
Manhattan schist, Merrill, No. 548.
Maquoketa shale, Calvin, No. 123.
Marble Island quartzite, Tyrrell, No. 784.
Marcellus, Ries, Nos. 658, 659.
Marcellus shale, Bishop, No. 80.
Marcellus shale, Grabau, No. 312.
Marcellus shale, Lincoln, No. 490.
Marcellus shale, Ries, No. 642.
Maroon formation, Emmens, No. 259.
Maroon formation, Spurr, No. 739a.
Marshalltown shale, Beyer, No. 76.
Martinsburg shale, Spencer, No. 723.
Massanutten sandstone, Spencer, No. 723.
Mata Chin formation, Hill, No. 352.
Mudan series, Spencer, No. 720.
Matawan formation, Clark, No. 152.
Maxville limestone, Weller, No. 860.
Geologic Formations Described—Continued.

Geologic Formations Described—Continued.

WEEKS. PALEONTOLOGY, PETROLOGY, AND MINERALOGY, 1898. 129

Medicine beds, Gould, No. 598.
Medina, Ries, No. 658.
Mentor beds, Jones, No. 395.
Merced formation, Turner, No. 777.
Merced series, Merriam, No. 545.
Middletown granitite, Emerson, No. 258.
Mission Creek series, Emmons, No. 360.
Mississippian series, Beyer, No. 76.
Mississippian series, Campbell, No. 129.
Mississippian series, Keyes, Nos. 415, 423, 425, 430, 435.
Missouri stage, Marbut, No. 520.
Moccasin limestone, Campbell, No. 127.
Monkey Hill beds, Dall, No. 186.
Monkey Hill beds, Hill, No. 352.
Monmouth formation, Clark, No. 152.
Montana formation, Spurr, No. 739a.
Montana formation, Todd, No. 773.
Montgomery series, Fairbanks, No. 262.
Monroe sandstone, Ries, No. 658.
Mounds Valley shale, Haworth, No. 335.
Mundie Hill beds, Dall, No. 186.
Mundie Hill beds, Hill, No. 352.
Munn formation, Clark, No. 152.
Muskegon formation, Turner, No. 777.
Musselshell formation, Turner, No. 777.
Muscovy Creek formation, Blake, No. 81.
Oneonta sandstone, Clarke, No. 155.
Oneonta limestone, Bishop, No. 89.
Oneonta limestone, Prosser, No. 642.
Oread limestone, Haworth, No. 335.
Oread limestone, Wilson, No. 911.
Oriskany, Ries, No. 658.
Oriskany sandstone, Lincoln, No. 490.
Oriskany sandstone, Luther, No. 505.
Oroville gravel, Willis, No. 896.
Osage, Keyes, Nos. 423, 425.
Osage, Weller, Nos. 894, 897.
Osage City shale, Beede, No. 65.
Osage series, Broadhead, No. 107.
Osage shale, Crane, No. 167.
Osage shale, Haworth, No. 335.
Osceola till and clay, Willis, No. 896.
Osgood limestone, Foerste, No. 273.
Oswegatchie series, Smith, No. 718.
Oswego limestone, Haworth, No. 335.
Ozark, Keyes, No. 433.
Ozark series, Broadhead, Nos. 107, 108.
Panama formation, Hill, No. 352.
Panola formation, Campbell, Nos. 123, 129.
Panto quartzite series, Spurr, No. 789a.
Paso Robles formation, Fairbanks, No. 262.
Patuxent series, White and Schuchert, No. 872.
Pawnee limestone, Haworth, No. 335.
Payette formation, Lindgren, Nos. 491, 492.
Pelican sandstone and shale, Tyrell, No. 786.
Pennington shale, Campbell, Nos. 128, 129.
Pennsylvania series, Beyer, No. 76.
Pennsylvania series, Campbell, No. 129.
Pensauken formation, Sallisbury, No. 682.
Perkeosie shale, Lyman, No. 507.
Perry limestone, Keyes, No. 415.
Phelps sandstone, Shepherd, No. 698.
Pierre, Darton, No. 194.
Platte shale, Keyes, No. 424.
Plattsburg limestone, Keyes, No. 424.
Plattsburg limestone, Keyes, No. 424.
Pleasanton shale, Bain, No. 36.
Pleasanton shale, Crane, No. 167.
Pleasanton shale, Haworth, No. 335.
Pleasanton shale, Keyes, No. 435.
Pleasanton shale, Marbut, Nos. 517, 519, 520.
Pocahontas formation, Campbell, No. 127.
Poison Canyon beds, Osborn, No. 585.
Portage group, Bishop, No. 89.
Portage group, Clarke, No. 154, 155.
Portage group, Lincoln, No. 490.
Portage sandstone, Luther, No. 504.
Portage shale, Luther, No. 505.
Poteau group, Drake, No. 239.
Potsdam, Blatchley and Ashley, No. 92.
Potsdam, Blatchley and Ashley, No. 92.
Potsdam, Ells, No. 658.
Potsdam, Wadsworth, No. 839.
Pottstown shale, Lyman, No. 567.
Pre-Kansan drift, Bain, Nos. 33, 40.
Price sandstone, Campbell, No. 127.
Princeton conglomerate, Campbell, No. 127.
Puget formation, Willis, Nos. 894, 895.
Puyallup Glacial epoch, Willis, No. 896.
Geologic Formations Described—Continued.

Puyallup sands, Willis, No. 996.
Quill porphyry, Emmons, No. 259.
Racooon River beds, Bain and Leonard, No. 45.
Raleigh limestone, Campbell, No. 127.
Rampart series, Emmons, No. 260.
Rancocas formation, Clark, No. 152.
Redbank sand, Clark, No. 152.
Red beds, Beede, No. 67.
Red beds, Williston, No. 904.
Reeder sandstone, Gould, No. 308.
Richmond shale, Campbell, No. 128.
Río Grande gravel, Herrick, No. 340.
Río Grande loess, Herrick, No. 340.
Rockcastle conglomerate lentil, Campbell, No. 128, 129.
Rockville conglomerate, Calvin, No. 123.
Rockwood formation, Campbell, No. 127.
Romney shale, Spencer, No. 732.
Rossville shale and sandstone, Beede, No. 65.
Rowe schist, Emerson, No. 258.
Russell formation, Campbell, No. 127.
St. Lawrence shale, Berkey, No. 74.
St. Louis, Beyer, No. 76.
St. Peters sandstone, Blatchley and Ashley, No. 92.
Sac limestone, Shepard, No. 698.
Salina, Ries, No. 659.
Salina group, Bishop, No. 80.
Salina group, Lincoln, No. 490.
Salina group, Luther, No. 555.
Sandstone, first, Shepard, No. 698.
Sandstone, second, Shepard, No. 698.
Sangamon zone, Leverett, No. 487.
San Miguel beds, Hill, No. 352.
San Miguel formation, Purington, No. 644.
San Pablo formation, Fairbanks, No. 222.
San Pablo formation, Knowlton, No. 451.
San Pablo formation, Merrim, Nos. 545, 546.
San Pablo formation, Turner, No. 777.
Sault Ste. Marie sandstone, Bell, No. 70.
Savoy schist, Emerson, No. 258.
Sawatch quartzite, Emmons, No. 259.
Saxton sand, Wilson, No. 912.
Sedona formation, Campbell, No. 127.
Severy shale, Haworth, No. 355.
Sevier shale, Campbell, No. 127.
Sewell marls, Clark, No. 152.
Shark River formation, Clark, No. 152.
Shenandoah limestone, Spencer, No. 723.
Shunganunga shale, Beede, No. 65.
Silver Lake shale, Beede, No. 65.
Skunnemunk formation, Ries, No. 658.
Soldier Creek shale, Beede, No. 65.
Spring Creek clays, Gould, No. 308.
Spring rock, Beede, No. 65.
Stanford limestone, Beede, No. 65.
State Island serpentinite, Merrill, No. 549.
State Quarry limestone, Calvin, No. 120.
Stockton series, Kinnell, No. 426.
Stylolites limestone, Grabau, No. 312.
Sub-Aftonian, Calvin, No. 123.
Sub-Aftonian stage, Beyer, No. 76.
Sugarloaf arkose, Emerson, No. 258.

Geologic Formations Described—Continued.

Superjacent series, Turner, No. 776.
Tahkandit series, Emmons, No. 260.
Talcott diabase, Emerson, No. 258.
Tar sands, Tyrrell, No. 786.
Teconomsh shale, Beede, No. 65.
Tellowa formation, Campbell, No. 127.
Thayer shale, Haworth, No. 355.
Thayer shale, Keyes, No. 424.
Topeka limestone, Beede, No. 65.
Topeka limestone, Haworth, No. 335.
Toronto formation, Leverett, No. 455.
Trenton, Bell, No. 68.
Trenton, Els, No. 256.
Trenton, Keyes, No. 415.
Trenton, Ries, No. 658.
Trenton limestone, Blatchley and Ashley, No. 92.
Trenton limestone, Cushing, No. 182.
Truro series, Shaler, No. 685.
Tully limestone, Lincoln, No. 490.
Tully limestone, Luther, No. 555.
Tyee sandstone, Diller, No. 235.
Ulna formation, Scott, No. 692.
Umqua formation, Diller, No. 235.
Upper Helderberg group, Bishop, No. 80.
Upper Helderberg group, Luther, No. 555.
Utica, Bell, No. 68.
Utica, Els, No. 256.
Utica shale, Blatchley and Ashley, No. 92.
Utica slate, Cushing, No. 182.
Uteley metarhyolite, Weidman, No. 857a.
Uralde formation, Hill and Vaughan, No. 357.
Vaishon glacial epoch, Willis, No. 896.
Villas shale, Haworth, No. 335.
Vincentown lime sands, Clark, No. 152.
Wabunsee shale, Keyes, No. 424.
Wa'karusua shale, Beede, No. 65.
Waldrum clay, Foerste, No. 273.
Wallkill limestone, Wolff and Brooks, No. 631.
Wapsipicon, Calvin, No. 123.
Wapsipicon stage, Calvin, No. 120.
Warrensburg sandstone, Marbut, Nos. 519, 520.
Washington gneiss, Emerson, No. 258.
Washington limestone, Richardson, No. 655.
Waterloo, Blatchley and Ashley, No. 92.
Waushara granite, Weidman, No. 857a.
Waverly shale, Campbell, Nos. 128, 129.
Weber formation, Emmons, No. 259.
Weber formation, Spurr, No. 739a.
Welch formation, Campbell, No. 127.
Wessington limestone, Bain, No. 39.
White limestone, Spencer, No. 730.
White River formation, Todd, No. 773.
White River group, Todd, No. 770.
Whitsett limestone lentil, Diller, No. 235.
Wichita division, Cummins, No. 180.
Wildcat series, Turner, No. 777.
Willard shale, Beede, No. 65.
Williamstown granite, Emerson, No. 258.
Winfield limestone, Campbell, No. 128.
Winfield limestone, Keyes, No. 431.
Winterse limestone, Bain, No. 39.
Wisconsin, Beyer, No. 76.
Wisconsin drift, Bain, Nos. 33, 34.
Geologic Formations Described—Continued.

- Wisconsin drift, Calvin, No. 121.
- Wisconsin drift, Leonard, No. 483.
- Woods Bluff, Harris, No. 334.
- Wyoming formation, Emmons, No. 259.
- Yarmouth zone, Leverett, No. 488.
- Yule limestone, Emmons, No. 259.
- Yule limestone, Merrill, No. 548.
- Zapata series, Spencer, No. 730.

Geologic Maps. (Includes geologic maps of the whole or any part of the States mentioned.)

- Alaska, Emmons, No. 260.
- Arkansas, Branner, No. 96.
- California, Turner, Nos. 776, 777.
- Colorado, Emmons, No. 259.
- Colorado, Spurr, No. 739a.
- Connecticut, Davis, No. 199.
- Connecticut, Emerson, No. 258.
- Cuba, Hill, No. 353.
- Idaho, Lindgren, Nos. 491, 492.
- Indiana, Blatchley, No. 88.
- Indiana, Vanater, No. 928.
- Indiana, Veatch, No. 836.
- Indian Territory, Drake, No. 239.
- Iowa, Bain, Nos. 33, 34, 35, 36, 37.
- Iowa, Calvin, Nos. 119, 120, 121, 122, 123, 124.
- Iowa, Leonard, No. 483.
- Iowa, Tilton and Bain, No. 766.
- Kansas, Adams, Nos. 8, 9.
- Kansas, Beede, No. 66.
- Kansas, Haworth, No. 335.
- Kansas, Smyth, No. 717.
- Kentucky, Campbell, Nos. 128, 129.
- Maryland, Mathews, No. 531.
- Massachusetts, Emerson, No. 258.
- Massachusetts, Fuller, No. 269.
- Minnesota, Kiltman, No. 250.
- Minnesota, Grant, No. 314.
- Minnesota, Todd, No. 707.
- Missouri, Broadhead, No. 107.
- Missouri, Marbut, Nos. 517, 518, 519, 520, 521.
- Missouri, Shepard, No. 698.
- Missouri, Wheeler, No. 869.
- Nebraska, Darton, No. 194.
- New Jersey, Salisbury, No. 682.
- New Jersey, Wolf and Brooks, No. 921.
- New Mexico, Herrick, No. 343.
- New York, Bishop, No. 80.
- New York, Clarke, No. 155.
- New York, Cushing, No. 182.
- New York, Darton, Nos. 192, 193.
- New York, Fairchild, No. 266.
- New York, Keup, No. 405.
- New York, Lincoln, No. 490.
- New York, Luther, Nos. 504, 505.
- New York, Merrill, No. 547.
- New York, Potter, No. 942.
- New York, Risig, No. 658.
- New York, Tarr, No. 756.
- North Carolina, Pratt, No. 635.
- Northwest Territory, Tyrrell, No. 784.

Geologic Maps—Continued.

- Ohio, Bowdockey, No. 94.
- Ohio, Fowke, No. 276.
- Oklahoma, Adams, No. 10.
- Ontario, Bell, No. 68.
- Oregon, Diller, No. 235.
- Pennsylvania, Lyman, No. 587.
- Texas, Hill and Vaughan, No. 357.
- Virginia, Campbell, No. 127.
- Virginia, Spencer, No. 723.
- Washington, Williams, No. 894.

Geography.

- Formation of new ravines, Linton, No. 497.
- Gold deposits of Georgia, Yeates, McCullie, and King, No. 941.
- Gold mining in Georgia, Tatham, No. 738.
- Gold mining in southern Appalachians, Nitze and Wilkefs, No. 579.
- Metamorphic rocks around Dahlonega, Watson, No. 822.

Phosphates and marls, McCullie, No. 810.

Glacial Geology.

- Ben Nevis, Upham, No. 806.
- Champlain subsidence, Taylor, No. 759.
- Determination of time since the retreat of ice sheet, Culbertson, No. 178.
- Drumlins in Glasgow, Upham, No. 802.
- Elevation of Glacial epoch, Spencer, No. 735.
- Fjords of Europe, Upham, No. 811.
- Fluctuations of North American glaciation, Upham, No. 823.
- Giant's kettles, Upham, No. 815.
- Glacial delta of Cuyahoga River compared with glacial delta at Trenton, N. J., Wright, No. 939.
- Glacial geology in America, Fairchild, No. 267.
- Glacial observations in Champlain-St. Lawrence Valley, Wright, No. 940.
- Glacial rivers and lakes of Sweden, Upham, No. 813.
- Glacial theories, Claypole, No. 158.
- Hudson River lobe of ice sheet, Hitchcock, No. 362.
- Hypothetical bearing on climatic changes, Chamberlin, No. 148.
- Micklenburg or Baltic moraines, Upham, No. 807.

Moraines and drumlins in English lake district, Upham, No. 801.

On "Correlation of moraines with raised beaches," Spencer, No. 734.

Parallel roads of Glen Roy, Upham, No. 803.

Preglacial soils, Udden, No. 791.

Primitive man in the Somme Valley, Upham, No. 807.

Raised shore lines at Trondhjem, Upham, No. 820.

Sheal-bearing drift at Moel Tryfan, Upham, No. 758.

Southern lobe of Laurentian ice sheet, Hitchcock, No. 383.

Stratification of glaciers, Reid, No. 650.

Variations of glaciers, Reid, No. 649.
Glacial Geology—Continued.

Alaska.
Country of the Klondike, Dunn, No. 242.

Canada.
Geography of Laurentian basin, Russell, No. 679.
Geology of French River sheet, Bell, No. 68.
Glacial and interglacial deposits at Toronto, Coleman, No. 162.
Glaciation of north-central Canada, Tyrrell, Nos. 785, 787.
Morges of Georgian Bay ice sheet, Taylor, No. 702.
Northwest coast of Hudson Bay, Tyrrell, No. 784.

Glacial Geology Continued.

Geography of Laurentian basin, Russell, No. 679.
Geology of French River sheet, Bell, No. 68.
Glacial and interglacial deposits at Toronto, Coleman, No. 162.
Glaciation of north-central Canada, Tyrrell, Nos. 785, 787.
Morges of Georgian Bay ice sheet, Taylor, No. 702.
Northwest coast of Hudson Bay, Tyrrell, No. 784.

Glacial phenomena of Staten Island, Hollick, No. 375.
Kettles in glacial lake deltas, Fairchild, No. 265.
Niagara Gorge, Upham, No. 796.
Topography and glacial deposits of Mohawk Valley, Brigham, No. 105.

Ohio.
Correlation of moraines with raised beaches, Leverett, No. 486.
Preglacial drainage of Cincinnati, Fowke, No. 276.
Supposed corduroy road, Wright, No. 938.

Washington.
Drift phenomena of Puget group, Willis, No. 596.
Glacial phenomena of Okanogan County, Dawson, No. 225.
Glaciers of Mount Rainier, Russell, No. 670.
Terrace of Columbia, Russell, No. 677.

Wisconsin.
Driftless region of Wisconsin, Squier, No. 740.

Greenland.
Cretaceous series of Greenland, White and Schuchert, No. 872.
Grönländs Eis und sein Vorland, Drygalski, No. 240.
Fluorspar, Parker, No. 599.
Northward over the great ice, Peary, No. 614.

Hawaiian Islands.
Lavas and soils, Maxwell, No. 539.

Idaho.
Bitter Root Forest Reserve, Goode, No. 303.
Boise folio, Lindgren, No. 492.
Canyons of Snake and Salmon rivers, Lindgren, No. 494.
Gold ore deposits of Mount Caribou, Kirby, No. 460.
Mining districts of Idaho Basin, Lindgren, No. 491.
Mount Caribou gold deposits, Lakes, No. 472.

Illinois.
New well at Rock Island, Udden, No. 790.
Peorian soil, Leverett, No. 485.
Preglacial soils, Udden, No. 791.
Weathered zone (Sangamon), Leverett, No. 487.

Indiana.
An old river channel, Veatch, No. 836.
Bedford limestone, Sibenthal, No. 701.
Clays of Indiana, Blatchley, No. 88.
Compressed structure in Indiana, Ashley, No. 10.

New York.
Basins in glacial lake deltas, Fairchild, No. 266.
Boulder pavement at Wilson, Gilbert, No. 291.
Drift formations of Long Island, Bryson, No. 115.
Drift on Staten Island, Hollick, No. 374.
Geology of Erie County, Bishop, No. 80.
Geology of Seneca County, Lincoln, No. 490.
Glacial geology of western New York, Fairchild, No. 298.

Michigan.
Burred moraine, Smyth, No. 717.
Geology of Effingham Ridge, Wilson, No. 911.
Kansan drift in Pennsylvania, Williams, No. 886.

Minnesota.
Geology of Keweenawan area, Eftman, No. 250.
Moraines of Minnesota, Todd, No. 767.
St. Croix River Valley, Eftman, No. 251.
So-called Cretaceous deposits, Sardeson, No. 685.

New England.
Carboniferous boulder train, Fuller, No. 280.
Champlain submergence, Fuller, No. 281.
Dikes in vicinity of Portland, Lord, No. 498.
Geology of Cape Cod district, Shaler, No. 995.
Holyoke folio, Emerson, No. 258.
Postglacial Connecticut at Turner Falls, Jefferson, No. 584.
Indiana—Continued.

Cross sections of Knobstone group, Bennett, No. 72.
Determination of time since the retreat of ice sheet, Culbertson, No. 178.
Fault structure in Indiana, Ashley, No. 17.
Geological scale of Indiana, Blatchley and Ashley, No. 92.
Geological section across Indiana, Newsom, No. 575.
Geology of Lake and Porter counties, Blatchley, No. 88.

Hydrographic basins of Indiana, Call, No. 118.
Knobstone group, Newsom, No. 576.
Lake Michigan and Mississippi watershed, Ball, No. 46.
Morainal stone quarry, Moore, No. 569.
Niagara limestone, Foerste, No. 273.

Ohio Valley in southern Indiana, Veatch, No. 835.
Petroleum, Oliphant, No. 580.
Petroleum industry, Blatchley, No. 90.
Quicksand pockets, Whitten, No. 879.

Randolph mastodon, Moore, No. 570.
Stone, Day, No. 227.
Streams, wells, and sand ridges in Lake County, Ball, No. 47.
Upper limit of Knobstone, Jones, No. 396.

Indian Territory.
Coal fields of Indian Territory, Drake, No. 239.
Geology of McAlister quadrangle, Taff, No. 753.

Iowa.
Aftonian and pre-Kansan deposits, Bain, No. 40.
Bethany limestone, Bain, No. 39.
Carboniferous formations of southwestern Iowa, Keyes, No. 424.
Coal deposits of trans-Mississippian field, Keyes, No. 435.
Dentition of Devonian Ptyctodontidae, Eastman, No. 248.
Drift section of Lameni, Fitzpatrick, No. 272.
Fifth Annual Report of State Geologist, Calvin, No. 119.
Florence formation, Pilby, No. 628.
Fossil fishes in the Devonian of Iowa, Eastman, No. 248.
Geology of Buchanan County, Calvin, No. 124.
Geology of Cerro Gordo County, Calvin, No. 121.
Geology of Dallas County, Leonard, No. 483.
Geology of Decatur County, Bain, No. 36.
Geology of Delaware County, Calvin, No. 123.
Geology of Guthrie County, Bain, No. 34.
Geology of Johnson County, Calvin, No. 120.
Geology of Madison County, Tilton and Bain, No. 768.
Geology of Marshall County, Beyer, No. 76.
Geology of Plymouth County, Bain, No. 37.
Geology of Polk County, Bain, No. 33.

Iowa building stones, Bain, No. 38.

Jura trias.

General.
Correlation of geographic relations of Trias, Smith, No. 712.
Jurassic formation, Marsh, No. 524.

Canada.
Triassic rocks of Digby Basin, Bailey, No. 29.

Atlantic coast region.
Administrative report, Smock, No. 715.
Collections of New York State Museum, Merrill, No. 547.
Newark system, Kimmell, No. 456.
Surface geology, Salisbury, No. 682.
Triassic formation of Connecticut, Davis, No. 199.

Great Plains region.
Geological reconnaissance in Oklahoma, Adams, No. 10.
Kansas physiography, Beede, No. 67.
Mesozoic section of Sierra-Blanca, Stanton, No. 742.

Jurassica remains from Kansas Permian, Williston, No. 904.

Rocky Mountain region.
Cycad horizons in Rocky Mountains, Marsh, No. 525.
Geology of Aspen mining district, Spurr, No. 739a.
Mining industries of Telluride quadrangle, Parumon, No. 644.
Section along Rapid Creek, Todd, No. 769.

Pacific coast region.
Bidwell Bar folio, Turner, No. 776.
Geographic relations of Trias, Smith, No. 712.
Geology of southern coast ranges, Fairbanks, No. 252.
Roseburg folio, Diller, No. 235.

Kansas.
A geological romance, Udden, No. 703.
A new fossil Eucalyptus, Ward, No. 847.
Kansas—Continued.
- Birds, Dinosaurs, etc., Willis, No. 902.
- Buried moraine, Smyth, No. 717.
- Coal deposits of trans-Mississippian field, Keys, No. 435.
- Cone-in-cone, Harly, No. 333.
- Correlation of Nebraska City, Nebr., section, Beede, No. 64.
- Drill hole at Wichita, Mead, No. 541.
- Gazetteer of Kansas, Gannett, No. 284.
- Geological map of Logan and Gove counties, Adams, No. 8.
- Geology of Effingham Ridge, Wilson, No. 911.
- Gypsum deposits of Kansas, Grimesley, No. 320.
- Gypsum in Kansas, Grimesley, No. 318.
- Ichthyic fauna of Kansas Cretaceous, Stewart, No. 745.
- Invertebrates of Cretaceous, Logan, No. 498.
- Jerome meteorite, Washington, No. 850.
- Kansas Coal Measures, Crane, No. 107.
- Kansas physiography, Beede, No. 67.
- McPherson Equus beds, Beede, No. 66.
- Mentor beds, Jones, No. 395.
- Microscopic organisms of Cretaceous, McClung, No. 514.
- Middle Coal Measures, Bain and Leonard, No. 45.
- Mineral resources of Kansas, Haworth, No. 336.
- New corals from Carboniferous, Beede, No. 61.
- New species of fish from Cretaceous, Stewart, No. 745.
- Physiography of southeastern Kansas, Adams, No. 9.
- Pleistocene of Kansas, Williston, No. 903.
- Saurolodon and allied species, Stewart, No. 747.
- Skeleton of Teleoceras fossilifer, Osborn, No. 588.
- Skull of Vertebratus undata Copa, Gilbert, No. 296.
- Stratigraphy of Kansas Coal Measures, Haworth, No. 335.
- Stratigraphy of Shawnee County, Beede, No. 95.
- Toxochelys, Case, No. 137.
- Transition beds from Comanche to Dakota, Gould, No. 308.
- Triassic Estheria from Red beds, Jones, No. 397.
- Turtle remains from Fort Pierre, Wagner, No. 842.
- Upper Cretaceous of Kansas, Adams, No. 7.
- Upper Cretaceous of Kansas, Williston, No. 901.
- Vertebrata remains from Kansas Permian, Williston, No. 904.

Kentucky—Continued.
- Natural arches of Kentucky, Miller, No. 561.
- Richmond folio, Campbell, No. 128.

Labrador.
- Cambrian faunas, Matthews, No. 535.
- Traverse of northern Labrador, Low, No. 500.

Louisiana.
- Clays of Louisiana, Clemencein, No. 160.

Maine.
- Dikes in vicinity of Portland, Lord, No. 499.
- Meteoric stone from Andover, Kunz, No. 458.
- Physiography, Davis, No. 200.

Maryland.
- Aims and methods of cartography, Gannett, No. 285.
- Coastal plain of Maryland, Shattuck, No. 696.
- Cretaceous fossils into the Eocene, Bagg, No. 24.
- First geological excursion along Chesapeake, Matthews, No. 533.
- Fossil cypress swamp, Bibbins, No. 77.
- Gold mining in southern Appalachians, Nitze and Wilkens, No. 579.
- Maps and map makers of Maryland, Matthews, No. 592.
- Maryland building stones, Matthews, No. 531.
- Properties of building stones, Merrill, No. 553.
- Terrace cutting of the Potomac, Abbe, No. 1.
- The McHenry formation, Uhler, No. 794.

Massachusetts.
- Acid pegmatite in diabase, Jaggart, No. 392.
- Biotite-tinguaite dike, Eakle, No. 244.
- Blue Hills complex, Crosby, No. 170.
- Building and road stones, Whittle, No. 881.
- Carboniferous bowlder train, Fuller, No. 280.
- Clays of Massachusetts, Whittle, No. 880.
- Geology of Cape Cod district, Shaler, No. 695.
- Geology, vicinity of Boston, Crosby, No. 169.
- Geology, vicinity of Boston, Woodman, No. 693.
- Holyoke folio, Emerson, No. 258.
- Occurrence of dunite, Martin, No. 530.
- Paleontology, eastern Massachusetts, Grabau, No. 309.
- Paleontology of Cambrian terranes, Grabau, No. 310.
- Petrographic province of Essex County, Washington, No. 851.
- Petrography, vicinity of Boston, Wolf, No. 926.
- Physiography, Davis, No. 200.
- Physiography of Massachusetts, Perry, No. 624.
- Postglacial Connecticut at Turners Falls, Jefferson, No. 393.
- Silverybergite and tinguaite, Washington, No. 849.
- Turners Falls region, Emerson, No. 257.

Mexico.
- A mineralized dike, Brown, No. 112.
- Bibliografia geologica, Aguilar, No. 11.
- Catalogos geografico de las especies minerales, Aguillera, No. 11a.
- Changes of level in Mexico, Hull, No. 382.
- Changes of level in Mexico, Spencer, No. 728.
Mexico—Continued.

Datolite from Guanajuato, Farrington, No. 270.

Diaphorite from Mexico, Spencer, No. 738.

Les filons argentifères de Pachuca, Ordonez, No. 382.

Native sodium carbonate, Blake, No. 85.

New copper deposit, Lukes, No. 500.

Occurrence of selenium, Pearce, No. 611.

Topography of Mexico, Wilson, No. 910.

Michigan.

Bayport quarries, Benedict, No. 71.

Closing of Michigan glacial lakes, Smyth, No. 716.

Dike features of Gogebic Range, Boss, No. 93.

Geology around Detroit, Taylor, No. 761.

Lake Superior copper deposits, Wadsworth, No. 839.

Lake Superior iron ore region, Winchell, No. 913.

Limestones of Michigan, Sherzer, No. 699.

Marquette Range, Jopling, No. 398.

Old glacial outlets, Gordon, No. 307.

Rock variation, Clements, No. 159.

Mineralogy.

Allanite crystals, Ries, No. 664.

Associated minerals of rhodolite, Hidden and Pratt, No. 350.

Baddeckite, Hoffman, No. 366.

Beryl crystal, Ries, No. 665.

Catalogo geografico de las especies mineralógicas, Aguilera, No. 114.

Catalogue of meteorites, Hovey, No. 380a.

Datolite from Guanajuato, Farrington, No. 270.

Diaphorite from Montana and Mexico, Spencer, No. 738.

Elements of mineralogy, Moses and Parsons, No. 572.

Erlonite, Eakle, No. 243.

Eruptive debris at Taylors Falls, Winchell, No. 919.

Fluorspar, Parker, No. 599.

Geological horizons of Nova Scotia minerals, Gilpin, No. 286.

Geology of St. Croix Dalles, Berkey, No. 73.

Iron meteorites, Preston, No. 630.

Jerome meteorite, Washington, No. 850.

Krennerite from Cripple Creek, Chester, No. 150.


Mesolite from Minnesota, Winchell, No. 921.

Metorite stone from Andover, Kunz, No. 458.

Mineralogical notes, Warren, No. 845.

Mineralogical notes on Sudbury antracite, Mickel, No. 509.

Mineralogy of the Carboniferous, Poole, No. 631.

Minerals at Ducktown, Tenn., Kemp, No. 412.

Native lead and copper and other minerals, Foote, No. 275.

New appliances and methods of studying crystals, Moses, No. 571.

Note on a mineral of columbite group, Goodwin and Miller, No. 306.

Mineralogy—Continued.

Notes on albertite, Rutherford, No. 660.

Notes on anthophyllite, enstatite, and beryl, Pratt, No. 654.

Notes on cyanite, zircon, and anorthite, Pratt, No. 633.

Occurrence of cubanite, Winchell, No. 914.

Occurrence of native copper, Wolff, No. 929.

Occurrence of rhodocroite, Pearce, No. 610.

Occurrence of selenium, Pearce, No. 611.

Occurrence of sperrylite, Hidden, No. 347.

Occurrence of tellurium, Pearce, No. 600.

Occurrence of tourmaline, Orcutt, No. 851.

Occurrence of vanadium and molybdenum, Hillebrand, No. 359.

Occurrence of xenotimic, Hoffman, No. 365.

On clinochordite, Penfield and Foote, No. 619.

On pearcite, Penfield, No. 618.

On rhodolite, Hidden and Pratt, No. 346.

Origin of corundum, Pratt, No. 625.

Orthoclase as gangue mineral, Lindgren, No. 493.

Quarts pseudomorphs, Hidden and Pratt, No. 350.


Rocks and minerals from California, Turner, No. 778.

San Angelo meteorite, Preston, No. 640.

Telluride ore, Pearce, No. 612.

Text-book of mineralogy, Dana, No. 191.

Thomsonite and lintonite, Winchell, No. 913.

Twinned crystals of zircon, Hidden and Pratt, No. 349.

Zirkelite, Wadsworth, No. 841.

Minerals described.

Albertite, Rutherford, No. 650.

Allanite, Ries, No. 664.

Amphibolite, Turner, No. 776.

Anorthite, Pratt, No. 633.

Anthophyllite, Pratt, No. 634.

Baddeckite, Hoffman, Nos. 364, 366.

Berthierite, Turner, No. 778.

Beryl, Pratt, No. 634.

Beryl, Ries, No. 653.

Bronzifavellite, Spencer, No. 739.

Bronzite, Hidden and Pratt, No. 350.

Chromite, Pratt, No. 636.

Clinochordite, Penfield and Foote, No. 619.

Copper, native, Wolff, No. 929.

Corundum, Hidden and Pratt, No. 350.

Corundum, Pratt, No. 625.

Corundum, Stone, No. 750.

Cubanite, Winchell, No. 914.

Cyanite, Pratt, No. 633.

Cyrtoellite, Hidden and Pratt, No. 350.

Datolite, Farrington, No. 270.

Diaphorite, Spencer, No. 725.

Enstatite, Pratt, No. 634.

Eriouite, Eakle, No. 243.

Fibroferrite, Hoffman, No. 384.

Gabnite, Hidden and Pratt, No. 350.

Gold, Hidden and Pratt, No. 350.

Iolite, Hidden and Pratt, No. 350.

Kintrolite, Warren, No. 845.

Krennerite, Chester, No. 150.
Mineralogy—Continued.
Minerals described—Continued.
Lead, native, Foote, No. 275.
Melanotekite, Warren, No. 848.
Mesolite, Winchell, No. 921.
Meteorite, Kunz, No. 458.
Meteorite, Preston, Nos. 639, 640.
Meteorite, Washington, No. 850.
Molybdenum, Hillebrand, No. 359.
Monazite, Hidden and Pratt, No. 356.
Orthoclase, Lindgren, No. 493.
Pearcite, Penfield, No. 618.
Phenacite, Preston, Nos. 639, 640.
Polybasite, Penfield, No. 618.
Rhodocroite, Pearce, No. 610.
Rhodolite, Hidden and Pratt, No. 348.
Roeblingite, Foote, No. 275.
Selenium, Pearce, No. 611.
Selenium, Turner, No. 778.
Silisbercite, Washington, No. 849.
Sparrylite, Hidden, No. 347.
Sparrylite, Hidden and Pratt, No. 350.
Tantalite, Warren, No. 848.
Tapiolite, Warren, No. 848.
Tellurium, Pearce, No. 606.
Tourmaline, Oreutt, No. 581.
Vandium, Hillebrand, No. 359.
Xenotime, Hoffman, Nos. 304, 305.
Zircon, Hidden and Pratt, No. 349.
Zircon, Pratt, No. 633.
Zircon, Turner, No. 778.
Zirkelite, Wadsworth, No. 841.

Mississippi.
Loam of north Mississippi, Mahry, No. 509.

Missouri.
A new lepidodendroid type, White, No. 870.
Benthyl limestone, Bain, No. 39.
Clay deposits, Wheeler, No. 809.
Coal deposits of trans-Mississippian field, Keyes, No. 435.
Cote sans Dessein and Grand Tower, Marbut, No. 322.
Geological formations of Cap-an-gres Uplift, Keyes, No. 435.
Geology of Boone County, Broadhead, No. 107.
Geology of Calhoun sheet, Marbut, No. 518.
Geology of Clinton sheet, Marbut, No. 517.

Missouri—Continued.
Geology of Huntville quadrangle, Marbut, No. 931.
Geology of Lexington sheet, Missouri, Marbut, No. 519.
Geology of Richmond quadrangle, Missouri, Marbut, No. 520.
Lead and zinc ores, Helburg, No. 339.
Middle Coal Measures, Bain and Leenard, No. 45.
Myth of Ozark Isle, Koyes, No. 433.
New species of crinoids from Carboniferous, Butts, No. 116.
Report upon Greene County, Shepard, No. 698.
The Ozark Uplift, Broadhead, No. 108.
Triplite deposits, Quimby, No. 646.

Montana.
Bitter Root Forest Reserve, Goode, No. 303.
Diapirite from Montana, Spencer, No. 738.
Geology of Helena, Griswold, No. 321.
Gold nugget from Montana, Pearce, No. 612.
Occurrence of cubanite, Winchell, No. 914.
Occurrence of rhodocroite, Pearce, No. 610.

Nebraska.
Abrasive materials, Parker, No. 598.
Ash beds of Great Plains, Barbour, No. 49.
Contributions to paleontology, Lucas, No. 501.
Correlation of section at Nebraska City, Nbr., Beede, No. 64.
Tertiary of South Dakota and Nebraska, Darton, No. 197.
Underground waters, Darton, No. 194.

Nevada.
Carbonate of soda deposits, Knapp, No. 443.
New species of Edestus, Dean, No. 229.

Newfoundland.
Chromite deposits, Maynard, No. 540.

New Jersey.
Administrative report, Smock, No. 715.
Age of artifact-bearing sand, Kimmel, No. 457.
Age of Franklin white limestone, Wolf and Brooks, No. 921.
Artesian wells in New Jersey, Woolman, No. 933.
Cretaceous clay marl, Hollick, No. 370.
Cretaceous Foraminifera of New Jersey, Bagg, No. 27.
Glacial delta of Cuyahoga River compared with similar delta at Trenton, N. J., Wright, No. 929.
Native lead and copper and other minerals, Foote, No. 375.
Newark system, Kimmel, No. 456.
Occurrence of native copper, Wolf, No. 929.
On clinohedrite, Penfield and Foote, No. 619.
Paleobotany of Cretaceous formation, Hollick, No. 368.
Physical geography of New Jersey, Salisbury, No. 661.
Physical geography of New Jersey, Vermeule, No. 927.
Relation of granite to ore deposits at Franklin Furnace, Wolf, No. 927.

Minnesota.
Archean of Minnesota and Finland, Winchell, No. 918.
Geology of Keweenawan area, Elftman, No. 250.
Geology of Mesabi Range, Grant, No. 314.
Intraformational conglomerates, Sardeson, No. 686.
Lake Superior iron ore region, Winchell, No. 913.
Mesolite from Minnesota, Winchell, No. 921.
Moraines of Minnesota, Todd, No. 767.
St. Croix River Valley, Elftman, No. 251.
So-called Cretaceous deposits, Sardeson, No. 685.
Thomsonite and lintonite, Winchell, No. 923.

Minnesota Continued.
Geology of Huntsville quadrangle, Marbut, No. 931.
Geology of Lexington sheet, Missouri, Marbut, No. 519.
Geology of Richmond quadrangle, Missouri, Marbut, No. 520.
Lead and zinc ores, Helburg, No. 339.
Middle Coal Measures, Bain and Leenard, No. 45.
Myth of Ozark Isle, Koyes, No. 433.
New species of crinoids from Carboniferous, Butts, No. 116.
Report upon Greene County, Shepard, No. 698.
The Ozark Uplift, Broadhead, No. 108.
Triplite deposits, Quimby, No. 646.

Montana.
Bitter Root Forest Reserve, Goode, No. 303.
Diapirite from Montana, Spencer, No. 738.
Geology of Helena, Griswold, No. 321.
Gold nugget from Montana, Pearce, No. 612.
Occurrence of cubanite, Winchell, No. 914.
Occurrence of rhodocroite, Pearce, No. 610.

Nebraska.
Abrasive materials, Parker, No. 598.
Ash beds of Great Plains, Barbour, No. 49.
Contributions to paleontology, Lucas, No. 501.
Correlation of section at Nebraska City, Nbr., Beede, No. 64.
Tertiary of South Dakota and Nebraska, Darton, No. 197.
Underground waters, Darton, No. 194.

Nevada.
Carbonate of soda deposits, Knapp, No. 443.
New species of Edestus, Dean, No. 229.

Newfoundland.
Chromite deposits, Maynard, No. 540.

New Jersey.
Administrative report, Smock, No. 715.
Age of artifact-bearing sand, Kimmel, No. 457.
Age of Franklin white limestone, Wolf and Brooks, No. 921.
Artesian wells in New Jersey, Woolman, No. 933.
Cretaceous clay marl, Hollick, No. 370.
Cretaceous Foraminifera of New Jersey, Bagg, No. 27.
Glacial delta of Cuyahoga River compared with similar delta at Trenton, N. J., Wright, No. 929.
Native lead and copper and other minerals, Foote, No. 375.
Newark system, Kimmel, No. 456.
Occurrence of native copper, Wolf, No. 929.
On clinohedrite, Penfield and Foote, No. 619.
Paleobotany of Cretaceous formation, Hollick, No. 368.
Physical geography of New Jersey, Salisbury, No. 661.
Physical geography of New Jersey, Vermeule, No. 927.
Relation of granite to ore deposits at Franklin Furnace, Wolf, No. 927.
New Jersey—Continued.
Surface geology, Salisbury, No. 682.
Upper Cretaceous formations, Clark, No. 152.

New Mexico.
Copper deposits of Mora County, Austin, No. 19.
Geology of New Mexico, Herrick, No. 342.
Geology of San Pedro and Albuquerque districts, Herrick, No. 343.
Occurrence of copper and lead, Herrick, No. 344.

New York.
Age of Niagara Falls, Wright, No. 937.
Allanite crystals, Ries, No. 664.
Bass in glacial lake delta, Fairchild, No. 268.
Beryl crystals, Ries, No. 665.
Boulder pavement at Wilson, Gilbert, No. 291.
Collections of New York State Museum, Merrill, No. 547.
Contact metamorphism of diabase, Irving, No. 390.
Crustaceans from Chemung group, Clarke, No. 156.
Crystalline rocks of St. Lawrence County, Smyth, No. 718.
Description of faulted region, Darton, No. 192.
Development of Tetradium cellulosum Hall sp., Ruedemann, No. 674.
Devonian shales, Ries, No. 659.
Drift formations on Long Island, Bryson, No. 116.
Drift on Staten Island, Hollick, No. 374.
Geological conditions at Portage, Clarke, No. 154.
Geological notes, Hollick, No. 369.
Geologic map of Albany County, Darton, No. 193.
Geology and relations to topography, Kemp, No. 407.
Geology of Clinton County, Cushing, No. 182.
Geology of crystalline rocks, Merrill, No. 548.
Geology of Erie County, Bishop, No. 80.
Geology of Erie County, Grabau, No. 312.
Geology of Essex County, Kemp, No. 406.
Geology of Lake Placid region, Kemp, No. 406.
Geology of Onondaga County, Luther, No. 505.
Geology of Orange County, Ries, No. 658.
Geology of Seneca County, Lincoln, No. 490.
Geology of vicinity of New York, Merrill, No. 551.
Glacial geology of western New York, Fairchild, No. 266.
Glacial observations in Champlain-St. Lawrence Valley, Wright, No. 940.
Glacial or postglacial diversion of Bronx River, Kemp, No. 408.
Glacial phenomena of Staten Island, Hollick, No. 375.
Hamilton and Chemung series of New York, Prosser, No. 642.
History of Jamesville Lake, Queene, No. 645.
History of Niagara River, Spencer, Nos. 727, 728.
North Dakota.
Geothermal data from deep wells, Darton, No. 196.

Ohio.
Cave of celestite, Wright, No. 938.
Cincinnati Silurian island, Miller, No. 560.
Corniferous rocks of Ohio, Sowmeock, No. 94.
Correlation of moraines with raised beaches, Levertit, No. 496.
Development of Ohio River, Titch, No. 766.
Geology of Jackson County coal, Roy, No. 670.
Glacial delta of Cuyahoga River compared with, glacial delta at Trenton, N. J., Wright, No. 999.
Preglacian drainage of Cincinnati, Fowke, No. 276.
Supposed corduroy road, Wright, No. 996.

Paleontology—Continued.

General—Continued.
New species of Brachiopoda described, 1892-94, Hall and Clarke, No. 527.
New species of Coratopedia, Marsh, No. 523.
New species of Edestus, Dean, No. 229.
Notes on Campymphylus torquatum Owen, Beede, No. 63.
Notes on Ichthyodectes, Hay, No. 337.
Notes on paleontological publications of Prot. William Wagner, Dall, No. 185.
On Platecarpus, Williston, No. 906.
Origin and significance of spines, Beecher, No. 60.
Origin of mammal, Marsh, No. 527.
Origin of mammalia, Osborn, Nos. 591, 593.
Paleozoic hexactinellid sponges, Hall, No. 526.
Prehistoric fauna of Block Island, Eaton, No. 249.
Principles of paleontology, Bernard, No. 75.
Recent and Tertiary Psammobioideae, Dall, No. 188.
Relationship of Chricidae to the primates, Earle, No. 245.
Sacrum of Morosaurus, Williston, No. 905.
Saurodon and allied species, Stewart, No. 747.
Sauropodous Dinosauria, Marsh, No. 529.
Serpent-like sea saurians, Ballon, No. 48.
Skeleton of Plesiosaurus primus, Osborn, Nos. 588, 592.
Skull of Amphelictus, Biggs, No. 668.
Standing fossil forest, Knowlton, No. 454.
Streptelasma and allied genera, Hall, No. 794.
The McHenry formation, Uhler, No. 794.
Value of type specimens, Marsh, No. 526.
Variations in Xiphactinus Leidy, Stewart, No. 746.
Variations of Sprifer cameronus Morton, Dall, No. 62.
Ventral armoring of Dinichthys, Dean, No. 228.
Washsmutli and Springer's classification of criuoids, Bather, No. 54.
Cambrin.
Brachiopod fauna of quartzitic pebbles of Carboniferous conglomerates, Walcott, No. 845.
Cambrian faunas, Matthews, No. 566.
Characteristieic genera of Cambrian, Matthews, No. 560.
Geology of St. Croix Dalles, Berkeyy, No. 74.
Oldest Paleozoic fauna, Matthews, No. 560.
Paleontology of Cambrian terranes, Graham, No. 310.
Paleontology of eastern Massachusetts, Graham, No. 310.
Recent discoveries in St. John group, Matthews, No. 589.
Silurian.
Development of Tetradium cellulosum Hall sp., Ruedemann, No. 674.
Fish tooth from upper Ariasag, Whiteaves, No. 676.
Fossil Cephalopoda, Whiteaves, No. 676.
Geology of southwest Nova Scotia, Bailey, No. 20.
Silurian—Continued.
Silurian fauna interpreted on epicontinental basis, Weller, No. 865.
Lower Silurian formations, Prosser, No. 643.
Sponges and coelenterates of lower Helderberg, Girty, No. 300.
Devonian.
Corniferous rocks of Ohio, Bownocker, No. 94.
Crustaceans from Chemung group, Clarke, No. 156.
Lower Silurian formations, Prosser, No. 643.
Sponges and coelenterates of lower Holderberg, Girty, No. 300.
Devonian.
Corniferous rocks of Ohio, Bownocker, No. 94.
Crustaceans from Chemung group, Clarke, No. 156.
Dentition of Devonian Ptyctodontid, Eastman, No. 246.
Devonian crinoids and blastoids, Weller, No. 862.
Devonian in southwestern Colorado, Spencer and Girty, No. 725.
Fauna of black shale, Girty, No. 299.
Fish tooth from upper Arisaig, Whiteaves, No. 876.
Fossil Cephalopoda, Whiteaves, No. 875.
Fucoids or coprolites, Udden, No. 789.
Geology of Cerro Gordo County, Calvin, No. 121.
Geology of Erie County, Grabau, No. 312.
Geology of Orange County, Hies, No. 658.
Hamilton and Chemung series of New York, Prosser, No. 642.
Ithaca and Portage groups, Clarke, No. 155.
Paleontology of eastern Massachusetts, Grabau, No. 309.
Stratigraphic position of Portage sandstones, Luther, No. 504.
Carboniferous (including Pennsylvanian).
A new lepidodendroid type, White, No. 870.
Batesville sandstone, Weller, No. 860.
Bethany limestone, Bain, No. 39.
Bibliographic index of North American Carboniferous invertebrates, Weller, No. 859.
Classification of Mississippian series, Weller, No. 854.
Coal fields of Indian Territory, Drake, No. 239.
Coal swamp, Knowlton, No. 455.
Fossil fishes in the Devonian of Iowa, Eastman, No. 248.
Geology of Decatur County, Bain, No. 36.
Geology of Madison County, Tilton and Bain, No. 764.
Geology of Polk County, Bain, No. 32.
New corals from Carboniferous, Beede, No. 61.
New species and new genus of Paleozoic fishes, Newberry, No. 573.
New species of crinoids from Carboniferous, Busk, No. 116.
New species of Hydroidocrinus, Weller, No. 801.
On the genus Lepidophloios, Dawson, Nos. 223, 224.
Paleontology of eastern Massachusetts, Grabau, No. 309.
Stratigraphy of Shawnee County, Beede, No. 65.
Vertebrate remains from Kansas Permian, Williston, No. 904.

Paleontology—Continued.
Jurassica.
Contributions to paleontology, Lucas, No. 501.
Geographic relations of Trias, Smith, No. 712.
Jurassic formation, Marsh, No. 524.
New Jurassic vertebrates, Knight, Nos. 445, 446.
Paleontology of eastern Massachusetts, Grabau, No. 309.
Triassic Estheriee from Red beds, Jones, No. 397.
Cretaceous.
Belly River horizon, Knowlton, No. 453.
Catalogue of Cretaceous and Tertiary plants, Knowlton, No. 450.
Couches & Rudists, Douville, No. 238.
Cretaceous clay marl, Hollick, No. 370.
Cretaceous Formanifera of New Jersey, Bagg, No. 27.
Cretaceous of Athabasca River, Tyrrell, No. 768.
Cretaceous series of Greenland, White and Schuchert, No. 872.
Description of Pityoxylon hollicki n. sp., Knowlton, No. 451.
Development of Lytoceras and Phylloceras, Smith, No. 715.
Birds, Dinosaurs, etc., Williston, No. 902.
Fossil cypress swamp, Bibbius, No. 77.
Fossil plants from San Pablo formation, Knowlton, No. 451.
Further notes on Block Island, Hollick, No. 373.
Geological notes, Hollick, No. 367.
Ichthyic fauna of Kansas Cretaceous, Stewart, No. 748.
Invertebrates of Cretaceous, Logan, No. 498.
Lower Cretaceous Gryphaeae, Hill and Vaughan, No. 356.
Microscopic organisms of Cretaceous, Mo-Clung, No. 514.
New species of fish from Cretaceous, Stewart, No. 748.
Notes on Block Island, Hollick, No. 367.
Paleobotany of Cretaceous formation, Hollick, No. 368.
Paleontology, eastern Massachusetts, Grabau, No. 309.
Protostegon Piastron, Wieland, No. 882.
Toxochelys, Case, No. 137.
Transition beds from Comanche to Dakota, Gould, No. 308.
Turtle remains from the Fort Pierre, Wagner, No. 842.
Upper Cretaceous formations, Clark, No. 152.
Upper Cretaceous formations, Clark, No. 152.
Upper Cretaceous of Kansas, Williston, No. 901.
Tertiary.
Catalogue of Cretaceous and Tertiary plants, Knowlton, No. 450.
Distribution of Neocene sea-urchins, Merriam, No. 545.
Eocene fossils from Alabama, Aldrich, No. 12.
Evolution of Amblypoda, Osborn, No. 589.
Extinct Camulid, Wortman, No. 955.
Extinct Rhinoceroses, Osborn, No. 585a.
Tertiary—Continued.
Formations and changes of level in Jamaica, Spencer, No. 730.
Fossil flora of Florissant, Kirchner, No. 442.
Fossil mammoths and diatoms from Dismal Swamp, Woolman, No. 934.
Fossil vertebrates from Alachua clay, Leidy, No.481.
Lignitic stage, Harris, No. 334.
Miocene edentates, Williston, No. 908.
New subgenus of Coralliophapa, Dall, No.189.
Paleontology, eastern Massachusetts, Grabau, No. 309.
Paleontology of collections, Dall, No. 186.
Rocks of Coast Range, Turner, No. 77.
Selenodont Artiodactyls of Tinta formation, Scott, No.692.
Skeleton of Coryphodon radians, Osborn, No. 587, 594.
Skeleton of Teleoceras fossilifer, Osborn, No. 589.
Skull of Vertebratus undata Cope, Gilbert, No. 296.
Tertiary and Pleistocene Foraminifera, Bagg, No. 25.
White River bad lands, Todd, No. 773.

Pleistocene.
Bison latifrons and Bos arizonica, Blake, No. 84.
Florence formation, Pilshry, No. 628.
Is the loess of aqueous origin, Shimek, No. 700.
Occurrence of mammoth and mastodon remains, Bell, No. 69.
Pleistocene of Kansas, Williston, No. 903.
Preglacial soils, Udden, No. 791.
Species of Bos in the Quaternary, Blake, No. 83.
Tertiary and Pleistocene Foraminifera, Bagg, No. 25.

Genera and species described.
Abietites cretacea, n. sp., Newberry, No. 573a.
Acanthocladia, Simpson, No. 702.
Acanthodes, Case, No. 133.
Acer florissantii n. sp., Kirchner, No. 442.
Aegococci n. sp., Kirchner, No. 442.
Pseudoscutum n. sp., Hollick, No. 270.
sp. s., Newberry, No. 573a.
Aciia subgen. H. and A. Adams, Dall, No. 184.
Acraspedites antiquus Haackel, Walcott, No. 844.
Acrogenia, Simpson, No. 702.
Acroristichum hesperium, Newberry, No. 573a.
Actinodon, Case, No. 134.
Actinotrypa, Simpson, No. 702.
Agathizaurus, Case, No. 135.
Agneustus.

BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 162.
PALEONTOLOGY, PETEOLOGY, AND MINERALOGY, 1898. 141

Paleontology—Continued.

Genera and species described—Continued.

Aralia macrophylla Newb., Newberry, No. 573a.
rotundiloba Newb. (1), Hollick, No. 368.

Araucaria ovata n. sp., Hollick, No. 370.

Area aquila Heilprin, Ball, No. 184.
bordeniana n. sp., Ball, No. 184.
carinensia Wagner, Ball, No. 185.

Archtegosaurus, Case, No. 134.
Archseopteryx, Case, No. 136.
Arcbimedes, Simpson, No. 702.
Arcbimedes, Simpson, No. 702.

Aristolochiopsis n. sp., Hollick, No. 370.

Aristolochia cordifolia, Newb., Newberry, No. 573a.

Barrandeoceras subcostulatum nom. prov., Whiteaves, No. 875.
Barrenella areyi, Hall and Clarke, No. 327.

Bathuriscus senectus sp., Matthew, No. 535.
Batostoma, Simpson, No. 702.
Beecheria davidsoni, Hall and Clarke, No. 327.

Bettina Parrotii n. sp., Esatman No. 246.

Bettina Parrotii n. sp., Esatman No. 246.
Bettina Parrotii n. sp., Esatman No. 246.

Bettina Parrotii n. sp., Esatman No. 246.

Bettina Parrotii n. sp., Esatman No. 246.
Bettina Parrotii n. sp., Esatman No. 246.
Paleontology— Continued.

Genera and species described— Continued.

Borinina punctata d'Orbigny, Bagg, No. 27.
artizonica, Blake, No. 84.
Brytylporap, Simpson, No. 702.
Brachysaurus, Williston, No. 902.
branchiosaurus, Case, No. 134.
Braasia (1) antiqua Newb., Newberry, No. 573a.

Brooksella Walcott, Walcott, No. 844.
alternata Walcott, Walcott, No. 844.
confusa Walcott, Walcott, No. 844.
Brontes sonosciu Clarke, Clarke, No. 156.
Bronsaurus, Case, No. 135.
Buslina aculeata, Bagg, No. 27.
buchiana, Bagg, No. 27.
elongata, Bagg, No. 27.
pachis Reuss, Bagg, No. 27.
varabilis d'Orbigny, Bagg, No. 27.
Bunomerxyx montanus n. gen. et sp., Wort- man, No. 935.
elegans, n. sp., Wortman, No. 935.
Bythopora, Simpson, No. 702.
Cabomba (?) gracilis Newb., Newberry, No. 573a.
inermis (Newb.) Hollick, Newberry, No. 573a.
Caydnia Gray, Dall, No. 184.
Calyptes polyepeala Newb., Newberry, No. 573a.
Callopora, Simpson, No. 702.
Camarasaurus, Osborn, No. 590.
(Atlantosaurus), Case, No. 135.
Camvosporhia rhomboidalis, Hall and Clarke, No. 327.
Camedomeryx n. gen., Scott, No. 692.
longiceps n. sp., Scott, No. 692.
Camelops Leidy, Wortman, No. 935.
americanus n. sp., Wortman, No. 935.
kansas Leidy, Wortman, No. 935.
vitiscianus Cope, Wortman, No. 935.
Campophyllum torquium Owen, Beede, No. 63.
Cancellaria annosa n. sp., Aldrich, No. 12.
antiqua Wagner, Dall, No. 185.
graciloides n. sp., Aldrich, No. 12.
var. bella n. var., Aldrich, No. 12.
Capellinia mira, Hall and Clarke, No. 327.
Capitosaurus, Case, No. 135.
Cassia sp. ?, Newberry, No. 573a.
Celastrophyllum newberryanum Hollick, Newberry, No. 573a.
Cebrocrinus nodulifera n. sp., Butts, No. 116.
Cetiosaurus, Case, No. 135.
Chama aquisizil Wagner, Dall, No. 185.
Champsaurosaurus, Case, No. 135.
Chelocerasus n. gen., Berkey, No. 74.
at. croixensis n. sp., Berkey, No. 74.
Chelidosaurus, Case, No. 134.
Chilopora, Simpson, No. 702.
Chilotrema, Simpson, No. 702.
Chlamys choctavensis, Harris, No. 334.
greggi n. sp., Harris, No. 334.
Chondrichelyx, Case, No. 133.
Chonosporha holderbergicia, Hall and Clarke, No. 327.
Christinia subquadratus, Hall and Clarke, No. 327.
Cimborus, Case, No. 135.
Cinnamomum heerii Losq., Newberry, No. 573a.
Cladoschonbus benetti n. sp., Beede, No. 61.
Cladodus mortifer N. & W., Newberry, No. 573.
Cladophyllum tortuosum Owen, Beede, No. 573a.
Clavulina communis d'Orbigny, Bagg, No. 27.
parisiensis d'Orbigny, Bagg, No. 27.
Clepsydrope Cope, Williston, No. 904.
Clidastes, Williston, No. 902.
cinerarium, Williston, No. 902.
ilodontus, Williston, No. 902.
stenops, Williston, No. 902.
torquor, Williston, No. 902.
velox, Williston, No. 902.
weskit, Williston, No. 902.
wynmani, Williston, No. 902.
Climatius, Case, No. 133.
Clistonella vagabunda, Hall and Clarke, No. 327.
Cladoceros, Case, No. 133.
Cladophyllum, Case, No. 133.
Cladocerus, Case, No. 133.
Cleocyclus, Case, No. 133.
Cleopatra, Simpson, No. 702.
Coccleros, Simpson, No. 702.
Coeoconus, Simpson, No. 702.
Coeoconus, Case, No. 133.
Colosetia, Case, No. 134.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Genera and species described—Continued.</td>
<td>Genera and species described—Continued.</td>
</tr>
<tr>
<td>Conchidium crassiplicia, Hall and Clarke, No. 327.</td>
<td>orbiculata Newb., Newberry, No. 573a.</td>
</tr>
<tr>
<td>exponens, Hall and Clarke, No. 327.</td>
<td>rostrata fossils Newb., Newberry, No. 573a.</td>
</tr>
<tr>
<td>georgii, Hall and Clarke, No. 327.</td>
<td>Coryphodon cinctus Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>nectrotrohi, Hall and Clarke, No. 327.</td>
<td>curviceratitis Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>obesulum, Hall and Clarke, No. 327.</td>
<td>cuspidatus Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>scoparium, Hall and Clarke, No. 327.</td>
<td>elephantopus Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>Conidria lamellata n. sp., Hall, No. 184.</td>
<td>hamatus Marsh, Osborn, No. 589.</td>
</tr>
<tr>
<td>Compsemys, Case, No. 135.</td>
<td>lobatus Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>Ooncllidium crassiplica, Hall and Clarke, No. 327.</td>
<td>marginalis Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>exponens, Hall and Clarke, No. 327.</td>
<td>radiana, Osborn, Nos. 587, 589, 594.</td>
</tr>
<tr>
<td>georgii, Hall and Clarke, No. 327.</td>
<td>repandus Cope, Osborn, No. 589.</td>
</tr>
<tr>
<td>greenii, Hall and Clarke, No. 327.</td>
<td>singularis n. sp., Osborn, No. 589.</td>
</tr>
<tr>
<td>ncttelrothi, Hall and Clarke, No. 327.</td>
<td>testis, Osborn, No. 589.</td>
</tr>
<tr>
<td>obselum, Hall and Clarke, No. 327.</td>
<td>ventanus n. sp., Osborn, No. 589.</td>
</tr>
<tr>
<td>scoparium, Hall and Clarke, No. 327.</td>
<td>wortmani, n. sp., Osborn, No. 589.</td>
</tr>
<tr>
<td>Conocoryphus mizer Billings, Matthew, No. 535.</td>
<td>(Metalophodon) armatus, Osborn, No. 589.</td>
</tr>
<tr>
<td>Coralliophaga prima n. sp., Harris, No. 672.</td>
<td>Coasiainnamon. Simpson, No. 702.</td>
</tr>
<tr>
<td>Corbionla cornelliaua n. sp., Harris, No. 334.</td>
<td>Coasinotrypa, Simpson, No. 702.</td>
</tr>
<tr>
<td>(Oryctomya) claibornensis Ball, Ball, No. 189.</td>
<td>Cranvs agaricana, Hall and Clarke, No. 327.</td>
</tr>
<tr>
<td>Corbiva cornelliana n. sp., Hall, No. 334.</td>
<td>favincola, Hall and Clarke, No. 327.</td>
</tr>
<tr>
<td>Corbula (Brurulume) Lamarck, Hall, No. 184.</td>
<td>granosa, Hall and Clarke, No. 327.</td>
</tr>
<tr>
<td>abalabamensis var. Harris, No. 334.</td>
<td>pulchella, Hall and Clarke, No. 327.</td>
</tr>
<tr>
<td>aldrichi, Harris, No. 334.</td>
<td>Craniella ulrichi, Hall and Clarke, No. 327.</td>
</tr>
<tr>
<td>concha, Harris, No. 334.</td>
<td>Crassatella halici, Harris, No. 334.</td>
</tr>
<tr>
<td>(Aolidis) caloese n. sp., Dall, No. 184.</td>
<td>Crassatella halei, Harris, No. 334.</td>
</tr>
<tr>
<td>engonata var. burnasi Dall, No. 184.</td>
<td>Cleenella, Brown, Hall, No. 184.</td>
</tr>
<tr>
<td>fossata Aldrich, Dall, No. 184.</td>
<td>diversicosta Orbigny, Dall, No. 184.</td>
</tr>
<tr>
<td>var.* extenuata Dall, No. 184.</td>
<td>duplicenstis n. sp., Dall, No. 184.</td>
</tr>
<tr>
<td>heterogenea Guppy, Dall, No. 184.</td>
<td>minuscula n. sp., Dall, No. 184.</td>
</tr>
<tr>
<td>millium n. sp., Dall, No. 184.</td>
<td>Crepiperis, Simpson, No. 702.</td>
</tr>
<tr>
<td>oniscus Conrad, Dall, No. 184.</td>
<td>Criocoptus, Williston, No. 904.</td>
</tr>
<tr>
<td>peredubia de Gregorio, Dall, No. 184.</td>
<td>Criocotus, Case, No. 134.</td>
</tr>
<tr>
<td>texana Gabb, Dall, No. 184.</td>
<td>Criainella, Simpson, No. 702.</td>
</tr>
<tr>
<td>vieta Guppy, Dall, No. 184.</td>
<td>Cristallariaacutauricularia (Fichtel and Moll), Bagg, No. 27.</td>
</tr>
<tr>
<td>waltlesiana Harris, Dall, No. 184.</td>
<td>articulata (Reese), Bagg, No. 27.</td>
</tr>
<tr>
<td>(Bothrocbrbula) radiatula n. sp., Dall, No. 184.</td>
<td>cassis (Fichtet and Moll), Bagg, No. 27.</td>
</tr>
<tr>
<td>synnarmostes n. sp., Dall, No. 184.</td>
<td>crepidula (Fichtel and Moll), Bagg, No. 27.</td>
</tr>
<tr>
<td>vimeine Guppy, Dall, No. 184.</td>
<td>cretacea Bagg, Bagg, No. 27.</td>
</tr>
<tr>
<td>willcoxii n. sp., Dall, No. 184.</td>
<td>cultrata, Bagg, No. 27.</td>
</tr>
<tr>
<td>(Corbullinellus) Meek and Worthen7 Dall, No. 184.</td>
<td>(Montfort), Bagg, No. 27.</td>
</tr>
<tr>
<td>(Cuneocorbula) alabamensis Lea, Dall, No. 184.</td>
<td>gibba d'Orbigny, Bagg, No. 27.</td>
</tr>
<tr>
<td>aldrichi Meyer, Dall, No. 184.</td>
<td>italica (Defrange), Bagg, No. 27.</td>
</tr>
<tr>
<td>barrattiana C. B. Adams, Dall, No. 184.</td>
<td>mammilligera Karrer, Bagg, No. 27.</td>
</tr>
<tr>
<td>compressa Lea, Dall, No. 184.</td>
<td>megapolitana Reuss, Bagg, No. 27.</td>
</tr>
<tr>
<td>contracta Say, Dall, No. 184.</td>
<td>projecta Bagg, Bagg, No. 27.</td>
</tr>
<tr>
<td>cuneata Say, Dall, No. 184.</td>
<td>radiata, Bagg, No. 27.</td>
</tr>
<tr>
<td>densa Conrad, Dall, No. 184.</td>
<td>retulata, Bagg, No. 27.</td>
</tr>
<tr>
<td>inoequalis Say, Dall, No. 184.</td>
<td>rotulata (Lamarck), Bagg, No. 27.</td>
</tr>
<tr>
<td>sarda n. sp., Dall, No. 184.</td>
<td>secans Reuss, Bagg, No. 27.</td>
</tr>
<tr>
<td>seminella n. sp., Dall, No. 184.</td>
<td>trachyphala (Reuss), Bagg, No. 27.</td>
</tr>
<tr>
<td>sphericus n. sp., Dall, No. 184.</td>
<td>triangularis d'Orbigny, Bagg, No. 27.</td>
</tr>
<tr>
<td>swiftiana C. B. Adams, Dall, No. 184.</td>
<td>wetherellii, Bagg, No. 27.</td>
</tr>
<tr>
<td>whitefieldi n. sp., Dall, No. 184.</td>
<td>(Jones), Bagg, No. 27.</td>
</tr>
<tr>
<td>Cornus newberryi Hollick, Newberry, No. 573a.</td>
<td>Cryptonella subelliptica, Hall and Clarke, No. 527.</td>
</tr>
</tbody>
</table>
Paleontology—Continued.

Genera and species described—Continued.

Ctenacanthus depressus n. sp., Newberry, No. 573.
gurleyi n. sp., Newberry, No. 573.
Ctenodus fischeri n. sp., Newberry, No. 573.
(Sagenodus) angustus n. sp., Newberry, No. 573.
Cucullae Lamarck, Ball, No. 184.
gigantea var., Harris, No. 334.
Cunninghamites elegans (Corda.) Endlich, Hollick, No. 902.
gigantea var., Harris, No. 334.
Cuspidaria prima, Harris, No. 334.
Cyamodus, Case, No. 135.
Cyclamina placenta, Bagg, No. 27.
Cyclopora, Simpson, No. 702.
Cycloporina, Simpson, No. 702.
Cynocercua, Williston, No. 902.
Cynodontia, Case, No. 135.
Cynognathus, Case, No. 135.
Cyrilla subgen., A. Adams, Ball, No. 184.
Cyrtia radians, Hall and Clarke, No. 327.
Cyrtina lachrymosa, Hall and Clarke, No. 327.
(Cyrtoceras) quebecense n. sp., Whiteaves, No. 875.
Cyrtodaria siliqua Daudin, Dall, No. 184.
Cystodictya, Simpson, No. 702.
Cystopora, Simpson, No. 702.
Dactyloidites asteroides Fitch, Walcott, No. 844.
Dammara (?) cliffwoodensis n. sp., Hollick, No. 370.
microlepis Heer (?), Hollick, No. 367.
Daptimus broadheadi n. sp., Stewart, No. 745.
Darina Gray, Dall, No. 184.
Davila Gray, Dall, No. 184.
Dekayella, Simpson, No. 702.
Dekayia, Simpson, No. 702.
Deltodus complanatus N. and W., Newberry, No. 573.
grandis N. and W., Newberry, No. 573.
inornatus n. sp., Newberry, No. 573.
spatulatus N. and W., Newberry, No. 573.
Derbya affinis, Hall and Clarke, No. 327.
bennetti, Hall and Clarke, No. 327.
(?) biloba, Hall and Clarke, No. 327.
broadhead, Hall and Clarke, No. 327.
(?) costatula, Hall and Clarke, No. 327.
cymbula, Hall and Clarke, No. 327.
rugiosa, Hall and Clarke, No. 327.
Dosinia lenticularis, Harris, No. 184.
Dunia grandis Dall, Dall, No. 184.
Dinichthys, Dean, No. 223.
temminckii Newberry, Eastman, No. 247.
pustulosa, Eastman, No. 247.
terrissi Newberry, Eastman, No. 247.
Dimorphodon, Case, No. 135.
Discophyllum pelatum Hall, Walcott, No. 844.
Dissorina bertheloti (d'Orbigny), Bagg, No. 27.
Dolichometopus Angelin, Matthew, No. 535.
acutus n. sp., Matthew, No. 535.
Dolichosoma, Case, No. 134.
Dorypyge Dames, Matthew, No. 535.
horrida n. sp., Matthew, No. 535.
parvula Billings, sp., Matthew, No. 535.
quadriceps valida n. var., Matthew, No. 535.
wasatchensis var. acutus n. var., Matthew, No. 535.
Dosinia lenticularis, Harris, No. 334.
Duncanella rudis, n. sp., Girty, No. 300.
Ectoconodon n. gen., Osborn, No. 589.
peterseni, n. g., Osborn, No. 589.
Edestus lecontei n. sp., Dean, No. 229.
Elonichthys, Case, No. 135.
Empedius, Case, No. 135.
Eophyton Torell, Walcott, No. 844.
linnaeum Torell, Walcott, No. 844.
torellii Linnarsson, Walcott, No. 844.
Equus oregonensis Newb., Newberry, No. 572a.
robustus Newb., Newberry, No. 572a.
yomingensis Lesq., Newberry, No. 572a.
sp. 1, Newberry, No. 572a.
Eridopora, Simpson, No. 702.
Eriocrinus toddana n. sp., Butts, No. 116.
Eriolobus, Dall, No. 184.
epilossus n. sp., Dall, No. 184.
lata n. sp., Dall, No. 184.
Equisetum dregonense Newb., Newberry, No. 573a.
robustum Newb., Newberry, No. 573a.
Paleontology—Continued.

**Genera and species described—Continued.**

*Ervilia polita* n. sp., Dall, No. 184.
*Ervilia triangularis* n. sp., Dall, No. 184.
*Echitais conidens* Cope, Wortman, No. 935.
*Easteria*, Jones, No. 397.
*Encalyptus*, Ward, No. 847.
*nervosa* Newb., Hollick, No. 367.
*Euchirosaurus*, Case, No. 134.
*Euchodus amicrodus* n. sp., Stewart, No. 748.
*Euchirus conidens* Cope, Wortman, No. 935.
*Eustasia*, Jones, No. 334.
*Eucalyptus*, Ward, No. 847.
*nervosa* Newb., Hollick, No. 367.
*Euchirosaurus*, Case, No. 134.
*Euchodus amicrodus* n. sp., Stewart, No. 748.
*Euplois* fasoiculata Haeckel, Walcott, No. 844.
*Eumetria verneuilana* Hall, Weller, No. 860.
*Euomphalus* Sowerby, 1812, Berkey, No. 74.
*Eurydictya*, Simpson, No. 702.
*Euspilopora*, Simpson, No. 702.
*Evactinopora*, Simpson, No. 702.
*Exogyra Iseviuscula* Eoemer, Logan, No. 498.
*pomlerosa* Roemer, Logan, No. 498.
"Fabella" oblonga, Harris, No. 334.
*Fabella* oblonga, Harris, No. 334.
*Fagus cretacea* Newb., Newberry, No. 573a.
*Favicella*, Simpson, No. 702.
*Favosites conicus* Hall, Girty, No. 300.
*conradi*, n. sp., Girty, No. 300.
*helderberglm* Hall, Girty, No. 300.
*Fenestella*, Simpson, No. 702.
*Fenestralia*, Simpson, No. 702.
*Fenestrapora*, Simpson, No. 702.
*Ficus (?) alaskana* Newb., Newberry, No. 573a.
*asarilbliaminor* Lesq., Newberry, No. 573a.
*(?) condoni* Newb., Newberry, No. 573a.
*kaladennyii* Lesq., Kirchner, No. 442.
*krasusiana Heer*, Hollick, No. 367.
*membranacea Newb., Newberry, No. 573a.
*planicosta* Lesq., Newberry, No. 573a.
*woolconi Newb. (?), Hollick, No. 368.
*Fistulana (Bruguiere) Cuvier*, Dall, No. 184.
*ocalana, n. sp.*, Dall, No. 184.
*Fistulieella*, n. gen., Simpson, No. 702.
*Fistulipora*, Simpson, No. 702.
*Fistuliporella*, n. gen., Simpson, No. 702.
*Fistuliporidra* n. gen., Simpson, No. 702.
*Fistuliporina* n. gen., Simpson, No. 702.
*Flabellina cordata* Eeuss, Bagg, No. 27.
*sagittaria (Lea), Bagg, No. 27.
*Flabelliporella*, Simpson, No. 702.
*Fraxinus affinis* Newb., Newberry, No. 573a.
*deuticulata Heer*, Newberry, No. 573a.
*integrifolia Newb., Newberry, No. 573a.
*Frondicularia alata* d'Orbigny, Bagg, No. 27.
*angusta (Nilsson) var. dimidia* Bagg, No. 27.
*archiaciana d'Orbigny, var. strigillata n. var., Bagg, No. 27.
*clarki Bagg*, Bagg, No. 27.
*culina* Reuss, Bagg, No. 27.
*Inversa* Reuss, Bagg, No. 27.
*lanceola* Reuss, Bagg, No. 27.
*major Bornemann*, Bagg, No. 27.
*ovata Roemer*, Bagg, No. 27.
*puchilda Karrer*, Bagg, No. 27.
*reticulata (Renss), Bagg, No. 27.
*Gaudryina pupoideae* d'Orbigny, Bagg, No. 27.
*Gelasica formosa* Heer, Hollick, No. 370.
*Glaesia romingeri*, Hall and Clarke, No. 327.
*Gloecone*, Simpson, No. 702.
*Gleichenia gracilis Hoer (?), Hollick, No. 367.
*Globigerina bulboides* d'Orbigny, Bagg, No. 27.
*bulloides*, McClung, No. 514.
*var. triloba* Reuss, Bagg, No. 27.
*cretacea* d'Orbigny, Bagg, No. 27.
*Glomus Jefey*, Dall, No. 184.
*Glossoptyra*, Simpson, No. 702.
*Glycymeria alabama* n. sp., Harris, No. 334.
*Glycymeria Da Costa*, Dall, No. 184.
*americana* Dall, No. 184.
*duplinensis* n. sp., Dall, No. 184.
*jamaicensis* n. sp., Dall, No. 184.
*laevia* Tnomey and Holmes, Dall, No. 184.
*parilis Conrad*, Dall, No. 184.
*pectinata* Guenel, Dall, No. 184.
*penaeacea* Lamarck, Dall, No. 184.
*subovata var. plagia* Dall, No. 184.
*Glyhioceras splinarius* Martin (?), Weller, No. 880.
*Glyptotrobus europaus* (Brong.) Heer, Newberry, No. 573a.
*Gomphognathus*, Case, No. 135.
*Gomphotherium Cope*, Wortman, No. 935.
*cameloides* n. ep., Wortman, No. 935.
*sternbergi* Cope, Wortman, No. 935.
*Geniophilla*, Case, No. 135.
*Geniptyra*, Simpson, No. 702.
*Grapalidocya*, Simpson, No. 702.
*Grewia crenata* (Ung.) Heer, Newberry, No. 573a.
*Grypha na subgen. Lamark*, Dall, No. 184.
*corrugata* Say (n. gen. G. corrugata Hill), Hill and Vaughan, No. 536.
*Gibuscos Carpae*, Hill and Vaughan, No. 536.
*mucroni* n. sp., Hill and Vaughan, No. 536.
*mucronata* Gabb, Hill and Vaughan, No. 536.
*nava* Hall, Hill and Vaughan, No. 536.
*pseudoryl Stanton*, Hill and Vaughan, No. 536.
*pitcheri Morton*, Hill and Vaughan, No. 536.
*var. hilli Carpae*, Hill and Vaughan, No. 536.

Bull. 162—10

Paleontology—Continued.

**Genera and species described—Continued.**

*Fusus fragilis* Wagner, Dall, No. 185.
*umbilicatus* Wagner, Dall, No. 185.
*Galeaaurus*, Case, No. 135.
*Gallicus* n. gen., Hay, No. 337.
*Gastrochaena cuneiformis* Spengler, Dall, No. 184.
*ovata Sowerby*, Dall, No. 184.
*(Spengler) Cuvier*, Dall, No. 184.
*(Spengleria) Tryon*, Dall, No. 184.
*var. rotonda* Dall, No. 184.
*Gaudryina pupoideae* d'Orbigny, Bagg, No. 27.
*Geinitzia formosa* Heer, Hollick, No. 370.
*Glaesia romingeri*, Hall and Clarke, No. 327.
*Gloecone*, Simpson, No. 702.
Paleontology—Continued.

Genera and species described—Continued.

Gryphaea wardi n. sp., Hill and Vaughan, No. 356.
Gryphites washitaensis Hill, Hill and Vaughan, No. 356.
Gypidula romingeri, Hall and Clarke, No. 327.
Gyroptychius, Case, No. 133.
Hadrosaurus, Case, No. 135.
Halliosaurus, Williston, No. 902.
Haliopolus, Case, No. 135.
Haplophragmium concavum Bagg, Bagg, No. 27.
Haploscapha eccentrica Conrad, Logan, No. 498.
Hedera sp.? ?, Rollick, No. 368.
Hederella, Simpson, No. 702.
(H)? Helicoceras corrugatum Stanton, Logan, No. 498.
Helicopora, Simpson, No. 702.
Helochelys, Case, No. 135.
Helodraco cox anus n. sp., Newberry, No. 573.
Helopora, Simpson, No. 702.
Heniopbragma, Simpson, No. 702.
Hemitrypa, Simpson, No. 702.
Hemotrypa, Simpson, No. 702.
Hesperornis regalis, Williston, No. 902.
Heterocardia Desbayes, Dull, No. 184.
(H)? Heteroceras angulatum M. & H., Logan, No. 498.
Heterodontosaurus ganei n. gen. etsp., Lucas, No. 501.
Heterotrypa, Simpson, No. 702.
Hexarhisites insignia Haeckel, Walcott, No. 844.
Hindia fibrosa Roemer, Girty, No. 300.
Hinnites crassus Conrad, Dall, No. 184.
Holocelphali, Case, No. 133.
Holosaurus, Williston, No. 902.
Holopychius, Case, No. 133.
Homotrypa, Simpson, No. 702.
Homotrypella, Simpson, No. 702.
Hydreionocrinus kansasensis n. sp., Weller, No. 861.
Hylerpeton, Case, No. 134.
Icthyosaurus, Case, No. 135.
Idiotrypa, Simpson, No. 702.
Iguanodon, Case, No. 135.
Hyperodapedon, Case, No. 135.
Hypsoaurus ve bbi Cope, Williston, No. 902.
Hypotheriun gratum (H. ingenuum Leidy), Leidy, No. 481.
Iris sp., Newberry, No. 573a.
Isotrypa, Simpson, No. 702.
Juglana affinis n. sp., Kirchner, No. 442.
Juglana artic a Heer (?), Hollick, No. 367.
Julia Gould, Dall, No. 184.
Labiosa alta Conrad, Dall, No. 184.
Labiosa canaliculata Say, Dall, No. 184.
Labiosa acula n. sp., Dall, No. 184.
Labiosa acrybia n. sp., Dall, No. 184.
Labiosa acuta Conrad, Dall, No. 184.
Labiosa amydra n. sp., Dall, No. 184.
Labiosa australis n. sp., Dall, No. 184.
Labiosa voluntary (Montagu) Bagg, No. 27.
Labiosa cambria, Walcott, Walcott, No. 844.
Labiosa cambria, Walcott, Walcott, No. 844.
Labiosa connexa n. sp., Simpson, No. 702.
Labiosa costata n. sp., Dall, No. 184.
Labiosa denticulata Say, Dall, No. 184.
Labiosa echioides (Lankester) Dall, No. 184.
Labiosa echinata n. sp., Dall, No. 184.
Labiosa echinates Say, Dall, No. 184.
Labiosa falcata (Say) Dall, No. 184.
Labiosa falcata Say, Dall, No. 184.
Labiosa falcata (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
Labiosa frondosa (Say) Dall, No. 184.
WEEKS. — PALEONTOLOGY, PETROLOGY, AND MINERALOGY, 1898. 147

Paleontology—Continued.

Genera and species described—Continued.

Leda catasarca n. sp., Dall, No. 184.
centroidea Say, Dall, No. 184.
corrense Say, Dall, No. 184.
dodonan sp., Dall, No. 184.
elongatoidea Harris, No. 334.
flexuos Heilprin, Dall, No. 184.
hypsona n. sp., Dall, No. 184.
(Lusinera Conrad var.) canonica n. sp.,
Dall, No. 184.
marianna, Harris, No. 334.
multilinata Conrad, Dall, No. 184.
parva, Harris, No. 334.
phalacra n. sp. ?, Dall, No. 184.
pharcida n. sp., Dall, No. 184.
protexta, Harris, No. 334.
proteita Gabb, Dall, No. 184.
trochilia n. sp., Dall, No. 184.
Leguminositis marcouanus Heer, Newberry,
No. 573a.
Leiorchynchus quadricostatum Vanuxem,
Girty, No. 299.
Lepidodendron, Dawson, No. 223.
cyclostigma Lx., White, No. 870.
Lepidophloios, Dawson, No. 223.
calicanus Dawson, No. 223.
cliftonensis Dawson, Nos. 223, 224.
Leptseuisca adnascens, Hall and Clarke, No.
327.
tangens, Hall and Clarke, No. 327.
Leptobrachites gigantea Haeckel, “Walcott,
No. 844.
844.
Leptophractus, Case, No. 134.
Leptoreodon marsbili, n. gen. et sp., Wortman,
No. 935.
Leptotragulus Scott and Osbom, Scott, No.
692.
Leptotrypa, Simpson, No. 702.
Lichenalis, Simpson, No. 702.
Lima (Bruguier) Cuvier, Dall, No. 184.
(Stenoides) scabra Born, Dall, No. 184.
(Lima) caloosana n. sp., Dall, No. 184.
smirna n. sp., Dall, No. 184.
viokeburgiana n. sp., Dall, No. 184.
tampaensis n. sp., Dall, No. 184.
costulata n. sp., Dall, No. 184.
(Mantellum) caloosana n. sp., Dall, No.
184.
carinata, d’Orbigny, Bagg, No. 27.
Lingulipora n. subgen., Girty, No. 334.
Lingulopsis grandl, Hall and Clarke, No. 327.
Linnarsonella belti Dav. mut. magna n. mut.,
Matthew, No. 535.
Lioerynchus losleyi, Hall and Clarke, No. 327.
robustus, Hall and Clarke, No. 327.
Loastracus validus n. sp., Matthew, No. 535.
Liquidambar europaeum Al. Br., Newberry,
No. 573a.
obsolufabatus (Heer) Hollick, Newberry,
No. 573a.
Liriodendron messilii (Heer) Hollick, Newberry,
No. 573a.
primumvum Newb., Newberry, No. 573a.
Lithophaea Boltan, Dall, No. 184.
antilamur Orbyigny, Dall, No. 184.
(?) batesvillenai n. sp., Weller, No. 660.
Milla Orbyigny, Dall, No. 184.
unda n. sp., Dall, No. 184.
(Diverua) blusleta Orbyigny, Dall, No.
184.
(Myosorceps) aristata Dall, Newberry,
No. 184.
Litoceras versatum Billings, Whitesaves, No.
875.
Loculipora, Simpson, No. 702.
Lucina astartiformis, Harris, No. 334.
greggi, Harris, No. 334.
occidentalis Morton, Logan, No. 496.
(Diverua) bisulcata Orbigny, Dall, No.
184.
Linn6, Dall, No. 184.
Mactra Lamarck, Dall, No. 184.
Lycoisaurus, Case, No. 125.
Lygodium kaufussi Heer, Newberry, No.
573a.
Lyropora, Simpson, No. 702.
Lyroporella, Simpson, No. 702.
Lyroporida n. gen., Simpson, No. 702.
Lyactinella n. gen., Girty, No. 300.
gohardii, Harris, No. 334.
(MactileUa) Gray, Dall, No. 184.
(Mactroderma) Dall, No. 184.
(Mactrotoma) Dall, No. 184.
cymata n. sp., Dall, No. 184.
fragilis Gmelin, Dall, No. 184.
(Mactropila) Dall, No. 184.
willcoxi, n. sp., Dall, No. 184.
(Mactropol) Dall, No. 184.
(Mactrotoma) Dall, No. 184.
(Macrotropis Conrad, Dall, No. 184.
Maccrotrix altuans Heer (?), Newberry, No.
573a.
Paleontology—Continued.

Genera and species described—Continued.

Magnolia elliptica Newb. sp., Newberry, No. 573a.
longifolia Newb. (?), Hollick, No. 368.
obovata Newb., Newberry, No. 573a.
rotundifolia Newb., Newberry, No. 573a.
woodringensis Hollick, Hollick, No. 367, 370.

Manicaria haydenii Newb., Newberry, No. 573a.
Marginulina ensis Keuss, Bagg, No. 27.
pediformis Bornemann, Bagg, No. 27.
trilobata d'Orbigny, Bagg, No. 27.

Martesia Leach, Ball, No. 184.

elongata, Harris, No. 334.

Martesia Leach, Ball, No. 184.

Mastodon floridanus, Leidy, No. 481.
Mastodonsaurus, Case, No. 134.
Medusichnites Matthew, Walcott, No. 844.
Medusida "Walcott, Walcott, No. 844.
atava Pohlig, Walcott, No. 844.

bicincta Haeckel, Walcott, No. 844.
costata Torrell (sp.), Walcott, No. 844.
deperdita Beyrich (sp.), Walcott, No. 844.
porpitina Haeckel, Walcott, No. 844.
princeps Torrell (sp.), Walcott, No. 844.
quadraa Haeckel, Walcott, No. 844.
radiata Linnarsson (sp.), Walcott, No. 844.

Medusites cretaceous Kner, Walcott, -No. 844.
helgolandicus Brandt, Walcott, No. 844.
latilobatus Amruon, Walcott, No. 844.

Meekapora, Simpson, No. 702.

Megalneusaurus n. gen., Knight, No. 446.

Megalonyx, Case, No. 136.

Melina Ketzius, Dall, No. 184.

maxillata (Deshayes), Dall, No. 184.

Mesorasaurus, Williston, No. 905.
Mortoniceras abashonense Meek, Logan, No. 498.

vermillionense M. & H., Logan, No. 498.
Mossasaurus, Williston, No. 902.
horridus, Williston, No. 902.

Mullinia Gray, Dall, No. 184.
caloecensis n. sp., Dall, No. 184.
gregata Conrad, Dall, No. 184.
pseudoceras Lamarck, Dall, No. 184.

Mya arenaria Linne, Dall, No. 184.
arkansana n. sp., Weller, No. 860.

prodita Conrad, Dall, No. 184.
truncata Linne, Dall, No. 184.

Mylopon, Case, No. 136.

Myrica longa Heer, Hollick, No. 368.

Malacoceras hyster Meek, Logan, No. 573a.

Myristica (L.) Bolten, Dall, No. 184.
edulis Linn6, Dall, No. 184.
pandionis n. sp., Dall, No. 184.
(Myrmomya) exustus Linne, Dall, No. 184.
hamatus Say, Dall, No. 184.

(Mytiloconcha) incurvus Conrad, Dall, No. 184.
Paleontology—Continued.

Genera and species described—Continued.

Naosaurna, Case, No. 135.

Negundo triloba Nowb., Newberry, No. 573a.

Nemataxis, Simpson, No. 702.

Nematopora, Simpson, No. 702.

Nicholsonella, Simpson, No. 702.

Nilsonia gibbii (Nowb.), Hollick, Newberry, No. 573a.

Nodosaria aculeata, Bagg, No. 27.

acuminata (Keuss), Bagg, No. 27.

adolphinula (d'Orbigny), Bagg, No. 27.

affinis, Bagg, No. 27.

annulata Keuss, Bagg, No. 27.

bacillum, Bagg, No. 27.

communis (d'Orbigny), Bagg, No. 27.

costata Keuss, Bagg, No. 27.

farcimon (Soldani), Bagg, No. 27.

filiformis d'Orbigny, Bagg, No. 27.

inornata (d'Orbigny), Bagg, No. 27.

indifferens (Keuss), Bagg, No. 27.

laevigata d'Orbigny, Bagg, No. 27.

longiscata d'Orbigny, Bagg, No. 27.

multicostata (d'Orbigny), Bagg, No. 27.

nitida d'Orbigny, Bagg, No. 27.

obliqua, Bagg, No. 27.

obliqua (Linné), Bagg, No. 27.

paupeuda (Orbigny), Bagg, No. 27.

radicula (Linné), Bagg, No. 27.

(Seisotreta) ovalis, Hall and Clarke, No. 327.

sp., Girty, No. 299.

Orbulina univerda, McClung, No. 514.

Oryctomya, Case, No. 135.

Orthothetes desideratus, Hall and Clarke, No. 327.

Orbiculoidea batesvillensis n. ep., Weller, No. 860.

orthoceras beauparneae n. sp., Whiteaves, No. 875.

Oxyrhoparia, Case, No. 134.

Osteolepis, Case, No. 133.

Ostrea Lamarck, Dall, No. 184.

alabamiensis Lea, Dall, No. 184.

anceps n. sp., Logan, No. 498.

carolinensis Conrad, Dall, No. 184.

compressirostris, Harris, No. 334.

congesta Conrad, Logan, No. 498.

falco Dall, Newberry, No. 573.

georgiana Conrad, Dall, No. 184.

johnsoni Aldrich, Dall, No. 184.

laevigata Bagg, Newberry, No. 573.

multicostata (d'Orbigny), Bagg, No. 27.

Ophiderpeton, Case, No. 134.

Ottithochiurus, Case, No. 135.

Orbisflabellites var. spanis, Hall and Clarke, No. 327.

Orbiculina univerda, McClung, No. 514.

Oriosa navicella, Hall and Clarke, No. 327.

Ophioceras, Case, No. 135.

Ophiderpeton, Case, No. 134.

Ophithochiurus, Case, No. 135.

Orbisflabellites var. spanis, Hall and Clarke, No. 327.

Orcis, Case, No. 135.

Orthoceras beauparneae n. sp., Whiteaves, No. 875.

Plesiomya loricula, Hall and Clarke, No. 327.

Orthoceras westoni, Whiteaves, No. 875.

Osteoceratites, Case, No. 134.

Osteostega, Case, No. 133.

Ostrea Lamarck, Dall, No. 184.

alabamiensis Lea, Dall, No. 184.

alabamiensis Lea, Harris, No. 334.

anceps n. sp., Logan, No. 498.

carolinensis Conrad, Dall, No. 184.

compressirostra, Harris, No. 334.

congesta Conrad, Logan, No. 498.

culmenmagnata Gabbe, Dall, No. 184.

georgiana Conrad, Dall, No. 184.

haitensis Sowerby, Dall, No. 184.

johnsoni Aldrich, Dall, No. 184.

lugabris Conrad, Logan, No. 498.

meegodon, Dall, No. 184.

percrassa Conrad, Dall, No. 184.

pulaskenis Harris, Dall, No. 184.

sculpturata Conrad, Dall, No. 184.
Paleontology—Continued.

Genera and species described—Continued.

Ostrea trigonalis Ball, No. 184.

var. sylvserupis, Harris, No. 334.

virginica Gmelin, Dall, No. 184.

(Alectronta) larva Lamarck, Logan, No. 498.

(Gryphostrea) subversa Conrad, Dall, No. 184.

Pachydictya, Simpson, No. 702.

Pachyrhizodus leptognathns n. sp., Stewart, No. 498.

velox n. sp., Stewart, No. 184.

Paleomythus Woodward (1891), Eastman, No. 246.

greenei Eastman, No. 246.

predator n. sp., Eastman, No. 246.

Paleosyops, Case, No. 136.

Palseomylus Woodward (1891), Eastman, No. 246.

Pantolambda bathmodon Cope, Osborn, No. 184.

cavirictus Cope, Osborn, No. 184.

Paradoxides abenusus mut., Matthew, No. 535.

Parameryx Marsh, Scott, No. 692.

(Lepotragulus) proavns Wortman, No. 935.

Paramya Conrad, Dall, No. 184.

subovata Conrad, Dall, No. 184.

Parapholas Conrad, Dall, No. 184.

sphenoideus White, Logan, No. 498.

sp., Logan, No. 498.

Parastrophia divergens, Hall and Clarke, No. 327.

greenii, Hall and Clarke, No. 327.

latiplicata, Hall and Clarke, No. 327.

multiplicata, Hall and Clarke, No. 327.

Parelasmus, Case, No. 135.

Pohyrnisa, Case, No. 136.

Pecten (Equipecten?) glyptus Verrill, Dall, No. 184.

inququals Sowerby, Dall, No. 184.

oxygonum Sowerby, Dall, No. 184.

perplanus Morton, Dall, No. 184.

scissuratus n. sp., Dall, No. 184.

suwanneensis n. sp., Dall, No. 184.

thestis Sowerby, Dall, No. 184.

(Patinopecten) Dall, Dall, No. 184.

ocalanus n. sp., Dall, No. 184.

precursor n. sp., Dall, No. 184.

(Chlamys) Bolten, Dall, No. 184.

alituplicatus Conrad, Dall, No. 184.

alumensis n. sp., Dall, No. 184.

clarkeanus Aldrich, Dall, No. 184.

cocoanus n. sp., Dall, No. 184.

cocymelus n. sp., Dall, No. 184.

decennarius Conrad, Dall, No. 184.

dehayesi Lea, Dall, No. 184.

exasperatus Sowerby, Dall, No. 184.

fucanus n. sp., Dall, No. 184.

greggi Harris, Dall, No. 184.

harrisi n. sp., Dall, No. 184.

hericus Gould, Dall, No. 184.

var. navarchus Dall, Dall, No. 184.

indecisus n. sp., Dall, No. 184.

interlineatus Gabb, Dall, No. 184.

islandicus Müller, Dall, No. 184.

kneikeri Conrad, Dall, No. 184.

latiarius Conrad, Dall, No. 184.

var. fuciculosus, Dall, No. 184.

var. monitimeris Conrad, Dall, No. 184.

nuperus Conrad, Dall, No. 184.

opunta n. sp., Dall, No. 184.

ornatus Lamarck, Dall, No. 184.

var. vagulus Dall, Dall, No. 184.

perplana n. sp., Dall, No. 184.

tricenarius Conrad, Dall, No. 184.

var. wilcoxii n. sp., Dall, No. 184.

(Euvala) bowdenensis n. sp., Dall, No. 184.

(Lyropecten) Conrad, Dall, No. 184.

(Nodipecten) anatipes Morton, Dall, No. 184.

antillarum Reclus, Dall, No. 184.

caloosaensis n. sp., Dall, No. 184.

condylomus n. sp., Dall, No. 184.

nodosus Linn6, Dall, No. 184.

peebeensis Tuomey and Holmes, Dall, No. 184.

pulichrocista Meyer and Aldrich, Dall, No. 184.

rogersi Conrad, Dall, No. 184.

subnodosa Sowerby, Dall, No. 184.

(Patinopecten) Dall, Dall, No. 184.

bellus Conrad, Dall, No. 184.

bicornis Conrad, Dall, No. 184.

burni n. sp., Dall, No. 184.

caurinus Gould, Dall, No. 184.

compactus n. sp., Dall, No. 184.

coosensis Shumard, Dall, No. 184.

diegensis Dall, Dall, No. 184.
PALEONTOLOGY, PETROLOGY, AND MINERALOGY, 1898. 151

Genera and species described—Continued.

Pecten (Patinopecten) eugrammatus n. sp., Ball, No. 184.

P. ernansus Ball, No. 184.

P. hemicyclicus Eacenel, Ball, No. 184.

P. hemphillii DaU, Ball, No. 184.

P. humphreysii Conrad, Ball, No. 184.

P. poulsoni Morton, Ball, No. 184.

P. propatulus Conrad, Ball, No. 184.

P. ravemeli n. sp., Ball, No. 184.

P. soror Gabb, Ball, No. 184.

P. stearnsii, Ball, No. 184.

P. (Placopecten) Verrill, Ball, No. 184.

P. clintonius Say, Ball, No. 184.

P. marylandicua "Wagner, Ball, No. 184.

P. (Plagioctenium) excentricua Gabb, Ball, No. 184.

P. gibbus Linne, Ball, No. 184.

P. var. amplioostatus Ball, Ball, No. 184.

P. var. borealis Ball, No. 184.

P. var. dislocatus Say, Ball, No. 184.

P. var. irradians Lamarck, Ball, No. 184.

P. var. nucleus Born, Ball, No. 184.

P. var. amplioostatus Ball, Ball, No. 184.

P. var. comparilis Tuomey and Holmes, Ball, No. 184.

P. var. darlingtonensis Ball, No. 184.

P. var. eboreus Conrad, Ball, No. 184.

P. var. senescens Ball, Ball, No. 184.

P. var. solarioidea Heilprin, Ball, No. 184.

P. var. yorkensis Conrad, Ball, No. 184.

P. pabloensis Conrad, Ball, No. 184.

P. s. ventricosus n. sp., Ball, No. 184.

P. virginianus Conrad, Ball, No. 184.

P. (Propeamusium) alabameusis Aldrich, Ball, No. 185.

P. alaskensis Ball, No. 184.

P. calvatus Morton, Dall, No. 184.

P. cerinus Conrad, Dall, No. 184.

P. guppyi n. sp., Dall, No. 184.

P. (Pseudeuneis) calceola, Hall and Clarke, No. 327.

P. (Pseudeuneis) patina, Hall and Clarke, No. 327.

P. Phleborosaurus, Williston, No. 902.

P. Phractopora, Simpson, No. 702.

P. Philastria, Simpson, No. 702.

P. Pilotrypa, Simpson, No. 702.

P. Pinacotrypa, Simpson, No. 702.

P. Pinus bambachi n. sp., Kirchner, No. 442.

P. Pistacia aquehongensis n. sp., Hollick, No. 368.

P. Pithecomys hollicki n. sp., Knowlton, No. 452.

P. Plactection, Simpson, No. 702.

P. Placodon, Case, No. 133.

P. Placoplana lithobleta n. sp., Ball, No. 184.

P. Pholadidea Goodall, Ball, No. 184.

P. P. alatoidea, Harris, No. 334.

P. P. producta Conrad, Dall, No. 184.

P. P. (Linne) Lamarck, Dall, No. 184.

P. P. memsingeri, Tuomey and Holmes, Dall, No. 184.

P. Pholodina, Case, No. 135.

P. P. caloosaensis n. sp., Ball, No. 184.

P. P. carneus Newb., Newberry, No. 573a.

P. P. cupanioides Newb., Newberry, No. 573a.

P. P. obcordatus Heer, Newberry, No. 573a.

P. P. vanosus Heer, Newberry, No. 573a.

P. P. vanosus Newb., Newberry, No. 573a.

P. Phyloceras Suess, Smith, No. 713.

P. P. oenicae Stantoni, Smith, No. 713.

P. P. Phyllodictya, Simpson, No. 702.

P. P. Pinus bamberachi n. sp., Kirchner, No. 442.

P. P. Platycystia, Simpson, No. 702.

P. P. Pileotrypa, Simpson, No. 702.

P. P. Phyllopecten, Simpson, No. 702.

P. P. Phyllopectinella, Simpson, No. 702.

P. P. Pinacotrypa, Simpson, No. 702.

P. P. Pinus bambachi n. sp., Kirchner, No. 442.

P. P. Pinus bamberachi n. sp., Kirchner, No. 442.

P. P. Nitrosaphialia, Simpson, No. 702.

P. P. Phyllopecten, Simpson, No. 702.

P. P. Pileotrypa, Simpson, No. 702.

P. P. Pinacotrypa, Simpson, No. 702.

P. P. Pinus bambachi n. sp., Kirchner, No. 442.

P. P. Platycystia, Simpson, No. 702.

P. P. Pileotrypa, Simpson, No. 702.

P. P. P. cupanioides Newb., Newberry, No. 573a.

P. P. P. obcordatus Heer, Newberry, No. 573a.

P. P. P. vanosus Heer, Newberry, No. 573a.

P. P. P. vanosus Newb., Newberry, No. 573a.
Paleontology—Continued.

Genera and species described—Continued.

Platecarpus gracilis, Williston, No. 902.

Icterus, Williston, No. 902.

Iatricus, Williston, No. 902.

Iatris, Williston, No. 902.

Nuplifus, Williston, No. 902.

Oxyrhynchus, Williston, No. 902.

Planifrons, Williston, No. 902.

Sinus, Williston, No. 902.

Plateodon Conrad, Dall, No. 184.

Plectambonites producta, Hall and Clarke, No. 327.

Plesiosaurus, Case, No. 135.

Pleurodon S. Wood, Dall, No. 184.

Woodii n. sp., Dall, No. 184.

Pleurastoma subnodosa Keuss, Bagg, No. 27.

Pleurofus, Williston, No. 902.

Pleurostomella subnodosa Keuss, Bagg, No. 27.

Plioplacura, Williston, No. 902.

Plioplatecarpus, Williston, No. 902.

Pododesinus rudis Broderip, Dall, No. 184.

Polystomella striatopunctata, Bagg, No. 27.

Populus acerfolia Newb., Newberry, No. 573a.

Cordata Newb., Newberry, No. 573a.

Polypora, Simpson, No. 702.

Polystomella striatopunctata, Bagg, No. 27.

Portea elegans Lesq. (?), Newberry, No. 573a.

Praecox, Simpson, No. 702.

Pressoria armatus Hinde, Girty, No. 299.

Prionocyclus hyattii Stanton, Logan, No. 498.

Promina White, Logan, No. 498.

Pseudosaurus, Case, No. 135.

Psiophora, Simpson, No. 702.

Ptychodus, Williston, No. 902.

Ptylopus petersoni n. gen. et sp., Wortman, No. 935.

Prunus variabilis Newb., Newberry, No. 573a.

Psammobius saxatilis n. sp., Harris, No. 334.

Psasambidium, Dall, No. 188.
Paleontology—Continued.

Genera and species described—Continued.

Psephodus (Helodus) politus n. sp., Newberry, No. 573.
Pseudamusium clabornense, Harris, No. 334.
Pteranodon, Case, No. 135.
Pteraspis, Case, No. 133.
Pteria colymbus Bolten, Dall, No. 184.

var. vitrea Eceve, Ball, No. 184.
multangula H. C. Lea, Dall, No. 184.
argentea var. ? chipolana Dall, Dall, No. 184.
Pterichidse, Case, No. 133.
Ptei-odactylus, Case, No. 135.
Pteronites hopkinsi n. sp., Weller, No. 860.
Iffivis n. sp., Weller, No. 860.
Pteropsis Conrad, Dall, No. 384.
Pterospermites dentatus Heer, Newberry, No. 573a.
modestus Lesq., Rollick, No. 368.

Ptilocella n. gen., Simpson, No. 702.
Ptllodictya, Siinpson, No. 702.
Ptilopora, Simpson, No. 702.
Ptiloporella, Simpson, No. 702.

Ptilotr.vpa, Simjison, No. 702.
Ptychonema, Simpson, No. 702.
Ptychosiftguru, Case, No. 135.
Ptyctodns calceolus, Eastman, No. 246.
compressus n. sp., Eastman, No. 246.
ferrox sp., Eastman, No. 246.
ominalis, Eastman, No. 246.
molaris, Eastman, No. 246.
panderi n. sp., Eastman, No. 246.

Ptyonius, Case, No. 134.
Pulvinulina elegans, Bagg, No. 27.
karsteni (Ren ), Bagg, No. 27.
micheliniana (d'Orbiguy), Bagg, No. 27.
reticulata Reus, var. carinata Bagg, Bagg, No. 27.
schreibersii, Bagg, No. 27.

Pyrops coloradoensis Stanton, Logan, No. 498.
Pyrosa, Karsten, No. 327.
Rhizomorphs, Hollick, No. 68.

Rhizostomites admirabilis Haeckel, Walcott, No. 844.
Rhizostomea, Bagg, No. 27.

Rhodopsoma, Bagg, No. 27.

Rhynchonella mutata Hall, Weller, No. 860.
Rhynchosoma excavatum, Eastman, No. 246.

Rhynchosoria scansa, Hall and Clarke, No. 327.
Rhynchosoria, Bagg, No. 27.

Rhynchosoria, Bagg, No. 27.
Paleontology—Continued.

Genera and species described—Continued.
Sabal campbelli Newb., Newberry, No. 573a.
grandifolia Newb. n. sp., Newberry, No. 573a.
imperialis Dn., Newberry, No. 573a.
powellii Newb., Newberry, No. 573a.
Sabal campbelli Newb., Newberry, No. 573a.
cuneata, Newb., Newberry, No. 573a.
flexuosa Newb., Hollick, No. 367.
flexuosa Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
morrisoni Lesq., Newberry, No. 573a.
Sabal campbelli Newb., Newberry, No. 573a.
atropurpurea Newb., Newberry, No. 573a.
proteusflexuosa, Newberry, No. 573a.
proteuslanceolata Lesq., Hollick, No. 367.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Lesq., Hollick, No. 367.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Sabal campbelli Newb., Newberry, No. 573a.
cornea Newb., Newberry, No. 573a.
meekii Newb., Hollick, No. 370.
Paleontology—Continued.  
*Genera and species described*—Continued.  
Solen sp., Harris, No. 334.  
Solenopleura arenosa Bill, sp., Matthew, No. 535.  
Solenopleura var. angulata n. var., Matthew, No. 535.  
Solenopleura robbii Hartt. mut. parva, Matthew, No. 535.  
Sphagorella sp., Harris, No. 334.  
Sphagiopora, Simpson, No. 702.  
Sphenia Turton, Ball, No. 184.  
Sphenopteris corrugata Newb., Newberry, No. 573.  
Spirifer cameratus Morton, Beede, No. 62.  
Spirifer canandaigui B., Hall and Clarke, No. 327.  
Spirifer crispatus, Hall and Clarke, No. 327.  
Spiriferia disjuncta Sowerby, var. sulcifer, Hall and Clarke, No. 327.  
Spiriferia keokuk Hall, Weller, No. 860.  
Spiriferia mucronata Conrad, var. posterus, Hall and Clarke, No. 327.  
Spiriferia newberryi, Hall and Clarke, No. 327.  
Spiriferia williamsi, Hall and Clarke, No. 327.  
Spirillina orbicularis, n. sp., Bagg, No. 27.  
Spiroloculina planulata, Bagg, No. 27.  
Spiroplecta clarki, Bagg, No. 27.  
Spirophyton, TJdden, No. 789.  
Spisula Gray, Ball, No. 184.  
(Hemimactra) Swainson, Ball, No. 184.  
Squama, Logan, No. 498.  
Squama lata Logan, Logan, No. 498.  
Squama spissa Logan, Logan, No. 498.  
Standella Gray, Dall, No. 184.  
Stegosaurus, Case, No. 135.  
Stenoceras fossiger, Osborn, No. 586.  
Tectonostornes, Case, No. 133.  
Teztnlaria abbreviata, Bagg, No. 27.  
Terebidacea, Dawson (1), Girty, No. 299.  
Squama, Logan, No. 498.  
Squama lata Logan, Logan, No. 498.  
Spisula Gray, Dall, No. 184.  
(Leptospisula) Ball, Dall, No. 184.  
Spongythus bostrychites Guppy, Ball, No. 184.  
Spondylus bostrychites Guppy, Ball, No. 184.  
Spondylus dumosis Morton, Ball, No. 184.  
Spondylus echinatus Martyn, Ball, No. 184.  
Spondylus rotundatus Heilprin, Ball, No. 184.  
Sporangites huronensis Bawson (?), Girty, No. 299.  
Squinula, Logan, No. 498.  
Squinula lata Logan, Logan, No. 498.  
Squinula spissa Logan, Logan, No. 498.  
Squilla Gray, Dall, No. 184.  
Squilla (Hemimactra) Swainson, Ball, No. 184.  
Squilla crurtus Conrad, Ball, No. 184.  
Squilla densa n. sp., Ball, No. 184.  
Squilla dodona n. sp., Ball, No. 184.  
Squilla duplinensis n. sp., Ball, No. 184.  
Squilla magnoliana n. sp., Ball, No. 184.  
Squilla marylandica n. sp., Ball, No. 184.  
Squilla subponderosa Orbiguy, Ball, No. 184.  
Squilla (Cymbophora) Gabb, Dall, No. 184.  
Squilla (Leptospisula) Ball, Ball, No. 184.  
Squilla (Schizodesma) Gray, Ball, No. 184.  
Squilla sp., Harris, No. 334.  
Squilla Spondylus bostrychites Guppy, Ball, No. 184.  
Squilla d'Orbiguy, Bagg, No. 27.  
Squilla articulata, Bagg, No. 27.  
Squilla gibbosa d'Orbiguy, Bagg, No. 27.  
Squilla globulosa Ehrenberg, Bagg, No. 27.  
Squilla globulosa McClung, No. 514.  
Squilla crurtus Hall, No. 327.  
Squilla attenuata n. sp., Dall, No. 184.
Paleontology—Continued.

Genera and species described—Continued.

Thienfeldia leeseruxiana Heer, Hollick, Nos. 267, 368.
Thuja interrupta Newb., Newberry, No. 573a.
Titanichthys agassizii Newberry, Eastman, No. 247.

clarkii Newberry, Eastman, No. 247

Titanotherium, Case, No. 136.

Torynifer criticus, Hall and Clarke, No. 327.
Toxochulys, Case, No. 137.

brachyrhina n. sp., Case, No. 137.
laterina, Case, No. 137.
laterinis Cope, Wagner, No. 842.
scertif, Case, No. 137.

Trematella, Simpson, No. 702.

Trematosaurus, Case, No. 134.

Trematopora, Simpson, No. 702.

Trematospira tennesseensis, Hall and Clarke, No. 327.

Tresus Gray, Ball, No. 184.

Tricalycites papyraceus Newb., Hollick, No. 367,368.

Triceratops calicornis n. sp., Marsh, No. 523.
obtusus n. sp., Marsh, No. 523.

Trigouarca pulchra var., Harris, No. 334.

Triiiacria C. Mayor, Ball, No. 184.

meekii n. sp., Ball, No. 184.

Tripleuria niagarensis, Hall and Clarke, No. 327.

Tripleuroceras robsoni n. sp., Whiteaves; No. 875.

Tripteroceras lambii, Whiteaves, No. 875.
Trirachodon, Case, No. 135.

Tritaxia tortilis (Reuss), Bagg, No. 27.

Tritaxia tricarinata (Keuss), Bagg, No. 27.

Tritylodon, Case, No. 135.

Trochammina inflata (Montagu), Bagg, No. 27.

Trochoceras insigne n. sp., Whiteaves, No. 875.

Trochospira, Sirnpson, No. 702.

Truncatulina akueriana (d'Orbigny), Bagg, No. 27.
haidingerii (d'Orbigny), Bagg, No. 27.
lobatula (Walker and Jacob), Bagg, No. 27.
refulgens (Montfort), Bag, No. 27.
ungeriana (d'Orbigny), Bagg, No. 27.
variabilis, Bagg, No. 27.
wuellerstorfl (Schwager), Bagg, No. 27.

Tryblidium Lindstrom 1880, Berkey, No. 74.

aduncum n. sp., Berkey, No. 74.
barabuensis (Whitfield), Berkey, No. 74.
frater, n. sp., Dall, No. 184.
lavias Say, Dall, No. 184.
psammotecta, n. sp., Dall, No. 184.
tarpaeia, n. sp., Dall, No. 184.

Zanclodon, Case, No. 135.
Zenatia, Gray, Ball, No. 184.
Zirfsea crispata Linne, Ball, No. 184.

Zizyphus longifolia Newb., Newberry, No. 573a.

obtna, n. sp., Kirchner, No. 442.

Zygospira putilla, Hall and Clarke, No. 327.
Petrology.

General.

Bysamitha, Iddings, No. 386.
Chemical and mineral relationships in igneous rocks, Iddings, No. 386.

Classification of igneous rocks, Turner, No. 781.

Determination of feldspars, Winchell, No. 916.

Determination of plagioclases, Becker, No. 59.

Differentiation in igneous magmas, Teall, No. 763.

Differentiation of magmas, Winchell, No. 920.
Petrology—Continued.

General—Continued.

Educational series of rock specimens, Diller, No. 234.

Geological history of Panama and Costa Rica, Hill, No. 352.

Igneous rocks from Panama and Costa Rica, Wolff, No. 928.

Magmatic differentiation in rocks of copper-bearing series, Lane, No. 475.

Methods of determining character of mineral plates, Wadsworth, No. 840.

Oldest known rock, Winchell, No. 924.

Origin of novaculites, Branner, No. 97.

Rocks of Laurentian system, Adams, No. 2.

Study of natural palimpsests, Grimes, No. 319.

Variation in composition of igneous rocks, Walker, No. 846.

Zirkelite, "Wadsworth, No. 841.

Alaska.

Gold fields of southern Alaska, Becker, No. 56.

Arkansas.

Origin of certain siliceous rocks, Derby, No. 293.

California.

Bidwell Bar folio, Turner, No. 776.

Geology of southern coast ranges, Fairbanks, No. 262.

Lava flows of Sierra Nevada, Ransom, No. 648.

Rocks and minerals from California, Turner, No. 772.

Rocks of coast ranges, Turner, No. 777.

San Clemente Island, Smith, No. 714.

Canada.

Basic dikes and volcanic rocks, Miller, No. 564.

Geology of French River sheet, Bell, No. 68.

Granites and arkoses, Barlow and Ferrier, No. 50.

Nodular granite, Adams, No. 3.

Colorado.

Geology of Aspen mining district, Spurr, No. 739.

Granite breccias of Cripple Creek, Stone, No. 751.

Teumil folio, Emmons, No. 250.

Connecticut.

Triassic formation of Connecticut, Davis, No. 199.

Georgia.

Metamorphic rocks around Dahlgonea, Watson, No. 832.

Hawaiian Islands.

Lavas and soils, Maxwell, No. 539.

Idaho.

Boise folio, Lindgren, No. 492.

Indian Territory.

Coal fields of Indian Territory, Drake, No. 238.

Maine.

Dikes in vicinity of Portland, Lord, No. 499.

Massachusetts.

Acid pegmatite in diabase, Jaggar, No. 392.
Petrology—Continued.

Rocks described—Continued.

Amphibole-pyroxene rock, Turner, No. 778.
Amphibolite, Watson, No. 852.
Andesite, Becker, No. 56.
Andesite, Diller, No. 235.
Andesite, Lindgren, No. 492.
Andesite, Smith, No. 714.
Andesite, Watson, No. 852.
Aphyolite, Lord, No. 499.
Aphyolite, Diller, No. 234.
Arkose, Barlow and Ferrier, No. 50.
Basalt, Becker, No. 56.
Basalt, Darton and Keith, No. 198.
Basalt, Diller, No. 234, 235.
Basalt, Lindgren, No. 492.
Basalt, Teall, No. 763.
Basalt, Turner, No. 776.
Basalt, Diller, No. 234.
Biotite-epidote-schist, Watson, No. 852.
Biotite-granite, Diller, No. 234.
Biotite-tinguaite, Eakle, No. 244.
Brecia, Diller, No. 234.
Camptonite, Diller, No. 234.
Camptonite, Eies, No. 658.
Camptonite, Lord, No. 499.
Cellular basalt, Diller, No. 234.
Chalk, Diller, No. 234.
Chert, Diller, No. 234.
Clay, Diller, No. 234.
Claystone, Diller, No. 234.
Coal, Diller, No. 234.
Conglomerate, Diller, No. 234.
Coquina, Diller, No. 234.
Coquina, Lord, No. 499.
Dacite, Diller, No. 234, 235.
Dacite, Smith, No. 714.
Dacite-porphry, Diller, No. 234.
Diorite, Becker, No. 56.
Diorite, Berkey, No. 73.
Diorite, Diller, No. 234, 235.
Diorite, Grant, No. 314.
Diorite, Smith, No. 714.
Diorite, Turner, No. 776.
Diorite-porphyry, Emmons, No. 239.
Diorite-porphry, Spurr, No. 739c.
Dolerite, Diller, No. 234.
Dolomite, Martin, No. 536.
Dolostone-dolomite-porphry, Lord, No. 499.
Epidote-mica-gneiss, Diller, No. 234.
Felsoporphry, Darton and Keith, No. 198.
Gabbro, Becker, No. 56.
Gabbro, Clements, No. 198.
Gabbro, Diller, No. 234.
Petrology—Continued.

Rocks described—Continued.

Mica-schist, Diller, No. 234.
Mica-schist, Watson, No. 852.
Microperthite, Weidman, No. 857a.
Minette, Diller, No. 234.
Molybdenite, Turner, No. 778.
Monzonite, Cushing, No. 181.
Nepheline-syenite, Diller, No. 234.
Nevadite, Diller, No. 234.
Nevadite, Washington, No. 851.
Novaculite, Branner, No. 97.
Novaculite, Derby, No. 233.
Olivine-bearing pyroxene-andesite, Diller, No. 234.
Olivine-diabase, Diller, No. 234.
Oolite, Diller, No. 234.
Orendite, Diller, No. 234.
Peridotite, Clements, No. 159.
Peridotite, Diller, No. 234.
Peridotite, Pratt, No. 635.
Phonolite, Diller, No. 234.
Porphyrite, Turner, No. 776.
Pulaskite, Diller, No. 234.
Quartz-alunite rock, Turner, No. 778.
Quartz-basalt, Diller, No. 234.
Quartz-diorite, Turner, No. 776.
Quartzite, Diller, No. 234.
Quartz-norite-gneiss, Diller, No. 234.
Quartz-porphyry, Ries, No. 658.
Quartz-porphyry, Spurr, No. 739a.
Quartz-schist, Diller, No. 234.
Quartz-schist, Watson, No. 852.
Quartz, vein, Diller, No. 234.
Residual rocks, Diller, No. 234.
Rhyolite, Diller, No. 235.
Rhyolite, Emmens, No. 259.
Rhyolite, Lindgren, No. 492.
Rhyolite, Smith, No. 714.
Rhyolite, Weidman, No. 857a.
Rhyolitic obsidian, Diller, No. 234.
Rhyolitic perlite, Diller, No. 234.
Rhyolitic pumice, Diller, No. 234.
Sand, beach, Diller, No. 234.
Sand, dune, Diller, No. 234.
Sandstone, Diller, No. 234.
Saxonite, Diller, No. 234.
Schist, Becker, No. 56.
Scoria, Diller, No. 234.
Serpentine, Diller, No. 234.
Serpentine, Merrill, No. 549.
Serpentine, Turner, No. 777.
Shale, Diller, No. 234.
Sinter, Diller, No. 234.
Slate, Diller, No. 234.
Soda-microline, Weidman, No. 857a.
Stalactite, Diller, No. 234.
Staurolite mica-schist, Diller, No. 234.
Physiographic Geology—Continued.
Geological waterways across Central America, Spencer, No. 707.
Geology and its relations to topography, Branner, No. 98.
Geology and its relations to topography, Davis, No. 221.
Geology and relations to topography, Kemp, No. 407.
Geology around Detroit, Taylor, No. 761.
Geology of Boone County, Mo., Breadhead, No. 107.
Geology of Buchanan County, Calvin, No. 124.
Geology of Calhoun sheet, Marbut, No. 518.
Geology of Cerro Gordo County, Calvin, No. 121.
Geology of Clinton County, Cushing, No. 182.
Geology of Clinton sheet, Marbut, No. 517.
Geology of Dallas County, Leonard, No. 483.
Geology of Decatur County, Bain, No. 36.
Geology of Delaware County, Calvin, No. 123.
Geology of Erie County, Bishop, No. 80.
Geology of Guthrie County, Bain, No. 34.
Geology of Johnson County, Calvin, No. 120.
Geology of Lake and Porter counties, Blatchley, No. 88.
Geology of Madison County, Tilton and Bain, No. 766.
Geology of Marshall County, Beyer, No. 76.
Geology of Massanutten Mountain, Spencer, No. 723.
Geology of Mesabi Range, Grant, No. 314.
Geology of Orange County, Ries, No. 658.
Geology of Plymouth County, Bain, No. 37.
Geology of Polk County, Bain, No. 33.
Geology of Richmond quadrangle, Mo., Marbut, No. 520.
Geology of the Bermudas, Stevenson, No. 743.
Glacial or postglacial diversion of Bronx River, Kemp, No. 408.
Glacial phenomena in Okanogan County, Dawson, No. 225.
Gronland's Eis und sein Vorland, Drygalski, No. 240.
History of Jamesville Lake, Quereau, No. 645.
History of Niagara River, Spencer, No. 732.
Holyoke folio, Emerson, No. 258.
Hydrographic basins of Indiana, Call, No. 118.
Influence of geologic structure on topography, Lyman, No. 506.
Kansas Coal Measures, Crane, No. 167.
Kansas physiography, Beede, No. 67.
Lake Chehalis, Wash., Gannett, No. 289.
Lake Michigan and Mississippi watershed, Ball, No. 46.
Lava flows of Sierra Nevada, Ransome, No. 948.

Physiographic Geology—Continued.
Les filons argentiferes de Pachuca, Ordonez, No. 582.
Loam of north Mississippi, Mabry, No. 509.
London folio, Campbell, No. 129.
McPherson Equus beds, Beede, No. 66.
Map of Alaska, Emmons, No. 260.
Mesa Verde, Newell, No. 574.
Niagara as a timepiece, Spencer, No. 729.
Northwest coast of Hudson Bay, Tyrrell, No. 784.
Nueces folio, Hill and Vaughan, No. 357.
Ohio Valley in southern Indiana, Veatch, No. 255.
Old glacial outlets, Gordon, No. 307.
Physical features of United States, Gilbert, No. 294.
Physical geography of New Jersey, Vermeule, No. 837.
Physical Geography of New York, Tarr, Nos. 756, 757.
Physiographic types, Gannett, No. 283.
Physiography of Massachusetts, Ferry, No. 224.
[Physiography of New England], Davis, No. 200.
Physiography of southeastern Kansas, Adams, No. 9.
Preglacial decay of rocks, Chalmers, No. 140.
Preglacial drainage in vicinity of Cincinnati, Fowke, No. 276.
Proposed addition to physiographic nomenclature, Gilbert, No. 293.
Reconnaissance in northwestern South Dakota, Todd, No. 770.
Report upon Greene County, Mo., Shepard, No. 686.
Richmond folio, Campbell, No. 128.
Roseburg folio, Diller, No. 235.
St. Croix River Valley, Elftman, No. 251.
Sands and clays of Ottawa Basin, No. 254.
Stratigraphy and structure of Puget group, Willia, No. 855.
Streams, wells, and sand ridges in Lake County, Ind., Ball, No. 47.
Tazewell folio, Campbell, No. 127.
Tennille folio, Emmons, No. 259.
The Ozark Uplift, Broadhead, No. 108.
Topographic features due to landslides, Russell, No. 678.
Topography of Mexico, Wilson, No. 910.
Trellised drainage in Adirondacks, Brigham, No. 106.
Traverse of northern Labrador, Low, No. 500.
Underground waters of Nebraska, Darton, No. 194.
Upper Cretaceous formations, Clark, No. 152.
Wave-formed cuspatc forelands, Tarr, No. 755.
West Indian bridge, Spencer, No. 736.
Pleistocene—Continued.

General—Continued.

Formations and changes of level in Jamaica, Spencer, No. 730.
Geological history of Panama and Costa Rica, Hill, No. 352.

Correlation.

Formations and changes of level in Jamaica, Spencer, No. 730.

Canada.

Occurrence of mammoth and mastodon remains, Bell, No. 69.
Northwest coast of Hudson Bay, Tyrrell, No. 784.

New England and New York.

Holyoke folio, Emerson, No. 258.
Geology of Onondaga County, Luther, No. 505.
Geology of Orange County, Ries, No. 658.

Atlantic coast region.

Administrative report, Smock, No. 715.

Tertiary and pleistocene foraminifera, Bagg, No. 25.

Great Lakes region.

Recent earth movements in Great Lakes region, Gilbert, No. 289.
Researches relating to Great Lakes, Spencer, No. 733.

Mississippi Valley.

Geological occurrence of clays, Keyes, No. 415.
Geological reconnaissance in Oklahoma, Adams, No. 10.
Geology of Boone County, Mo., Broadhead, No. 107.
Geology of Buchanan County, Calvin, No. 124.
Geology of Clinton County, Calvin, No. 123.
Geology of Dallas County, Leonard, No. 483.
Geology of Decatur County, Bain, No. 39.
Geology of Delaware County, Calvin, No. 122.
Geology of Guthrie County, Bain, No. 34.
Geology of Huntsville quadrangle, Mo., Marbut, No. 521.
Geology of Johnson County, Calvin, No. 129.
Geology of Madison County, Tilton and Bain, No. 766.
Geology of Plymouth County, Bain, No. 37.
Geology of Richmond quadrangle, Mo., Marbut, No. 520.

Loam of North Mississippi, Mabry, No. 509.
Ohio Valley in southern Indiana, Veatch, No. 835.

Pecosian soil, Leverett, No. 485.
Pleistocene of Kansas, Williston, No. 903.
Underground waters of Nebraska, Darton, No. 184.

Rocky Mountain region.

Belas folio, Lindgren, No. 492.
Mining districts of Idaho Basin, Lindgren, No. 491.
White River bad lands, Todd, No. 773.

Southwestern region.

Nuoces folio, Hilland Vaughan, No. 357.

Pacific coast region.

Geology of southern coast ranges, Fairbanks, No. 292.

Rhode Island.

Brachiopod fauna of quartzitic pebbles of carboniferous conglomerates, Walcott, No. 345.
Champlain submergence, Fuller, No. 231.
Further notes on Block Island, Hollick, Nos. 371, 372.
Geological notes, Hollick, No. 369.
Notes on Block Island, Hollick, No. 367.
Prehistoric fauna of Block Island, Eaton, No. 249.

Silurian.

General.

Silurian fauna interpreted on epicontinental basis, Weller, No. 565.

Canada.

Formations of Ottawa district, Ells, No. 256.

Atlantic coast region.

Administrative report, Smock, No. 715.

Tertiary and pleistocene foraminifera, Bagg, No. 25.

Great Lakes region.

Recent earth movements in Great Lakes region, Gilbert, No. 289.
Researches relating to Great Lakes, Spencer, No. 733.

Mississippi Valley.

Geological occurrence of clays, Keyes, No. 415.
Geological reconnaissance in Oklahoma, Adams, No. 10.
Geology of Boone County, Mo., Broadhead, No. 107.
Geology of Buchanan County, Calvin, No. 124.
Geology of Clinton County, Calvin, No. 123.
Geology of Dallas County, Leonard, No. 483.
Geology of Decatur County, Bain, No. 39.
Geology of Delaware County, Calvin, No. 122.
Geology of Guthrie County, Bain, No. 34.
Geology of Huntsville quadrangle, Mo., Marbut, No. 521.
Geology of Johnson County, Calvin, No. 129.
Geology of Madison County, Tilton and Bain, No. 766.
Geology of Plymouth County, Bain, No. 37.
Geology of Richmond quadrangle, Mo., Marbut, No. 520.

Loam of North Mississippi, Mabry, No. 509.
Ohio Valley in southern Indiana, Veatch, No. 835.

Pecosian soil, Leverett, No. 485.
Pleistocene of Kansas, Williston, No. 903.
Underground waters of Nebraska, Darton, No. 184.

Rocky Mountain region.

Belas folio, Lindgren, No. 492.
Mining districts of Idaho Basin, Lindgren, No. 491.
White River bad lands, Todd, No. 773.

Southwestern region.

Nuoces folio, Hill and Vaughan, No. 357.

Pacific coast region.

Geology of southern coast ranges, Fairbanks, No. 292.

Bull. 162—11
Sillurian—Continued.

**Mississippi Valley—Continued.**

Intraformational conglomerates, Sardeson, No. 586.
Limestones of Michigan, Sherzer, No. 692.
Niagara limestone, Feerse, No. 273.
Report upon Greene County, Mo., Shepard, No. 698.
The Ozark Uplift, Broadhead, No. 108.

**Rocky Mountain region.**

Geology of Ashen mining district, Spurr, No. 739a.
Geology of Helena, Griswold, No. 321.
Tenmile folio, Emmons, No. 259.

**South Carolina.**

Gold mining in southern Appalachians, Nitze and Wilkens, No. 579.

**South Dakota.**

Abrasive materials, Parker, No. 598.
Clay and stone resources, Todd, No. 774.
Cycad horizons in Rocky Mountains, Marsh, No. 525.
Fullers earth of South Dakota, Ries, No. 662.
Geology along Burlington and Missouri Railway, Todd, No. 771.
Geothermal data from deep wells, Barton, No. 196.
Main artesian basin, Todd, No. 772.
Northern Black Hills, Fruizer, No. 277.
Occurrence of tellurium, Purcher, No. 606.
Potadum gold ores, Smith, No. 708.
Protostegan Plastron, Wieland, No. 882.
Reconnaissance in northwestern South Dakota, Todd, No. 770.
Section along Rapid Creek, Todd, No. 769.
Tertiary of South Dakota and Nebraska, Darton, No. 197.
White River bad lands, Todd, No. 773.

**Tennessee.**

Minerals at Ducktown, Kemp, No. 412.
Phosphate rock deposits, Brown, No. 111.
Tennessee phosphates, Killebrew, No. 436.

**Tertiary.**

**General.**

Changes of level in Mexico, Spencer, No. 725.
Contributions to Tertiary fauna of Florida, Dall, Nos. 183, 184.
Cretaceous series of Greenland, White and Schuchert, No. 872.
Formations and changes of level in Jamaica, Spencer, No. 730.
Geological history of Panama and Costa Rica, Hill, No. 352.
Geology of Jamaica, Hershoy, No. 344.
Lignitic stage, Harris, No. 324.
Paleontology of Tertiary horizons, Dall, No. 186.

**Classification.**

Distribution of Neocene sea-urchins, Merriam, No. 545.

**Correlation.**

Formations and changes of level in Jamaica, Spencer, No. 730.

**Tertiary—Continued.**

**Atlantic coast region.**

Coastal plain of Maryland, Shattuck, No. 696.
Fossil mollusks and diatoms from Dismal Swamp, Woolman, No. 934.
Geology of Cape Cod district, Shaler, No. 695.
Surface geology, Salisbury, No. 682.
Tertiary and Pleistocene Foraminifera, Jagg, No. 52.

**Appalachian region.**

Richmond folio, Campbell, No. 128.

**Mississippi Valley.**

An old river channel, Veatch, No. 836.
Geological occurrence of clays, Keyes, No. 415.
Loam of north Mississippi, Mahy, No. 609.
Ohio Valley in southern Indiana, Veatch, No. 835.
Report upon Greene County, Mo., Shepard, No. 698.

**Great Plains region.**

Cement materials of Arkansas, Branner, No. 90.
Geological map of Logan and Gove counties, Adams, No. 8.
Geological reconnaissance in Oklahoma, Adams, No. 10.
McPherson Equus beds, Beede, No. 86.
Tertiary of South Dakota and Nebraska, Darton, No. 197.
Underground waters of Nebraska, Darton, No. 194.

**Rocky Mountain region.**

Boise folio, Lindgren, No. 492.
Mining districts of Idaho Basin, Lindgren, No. 491.
Reconnaissance in northwestern South Dakota, Todd, No. 770.
Wasatch and Bridger beds, Osborn, No. 585.
White River bad lands, Todd, No. 773.

**Texas.**

Nueces folio, Hill and Vaughan, No. 357.

**Pacific coast region.**

Bituminous rock deposits, Fairbanks, No. 264.
Coal fields of Puget Sound, Willis, No. 894.
Distribution of Neocene sea-urchins, Merriam, No. 545.
Geology of southern coast ranges, No. 262.
Oscillations of Pacific coast, Blake, No. 81.
Rocks of coast ranges, Turner, No. 777.
Roseburg folio, Diller, No. 235.
San Clemente Island, Smith, No. 714.
Stratigraphy and structure of Puget group, Willis, No. 895.

**Texas.**

Couches a Rudistes, Douville, No. 238.
Lower Cretaceous Gryphaeas, Hill and Vaughan, No. 356.
Mesozoic section of Sierra Blanca, Stanton, No. 742.
Nueces folio, Hill and Vaughan, No. 357.
Oil fields of Texas, Miller, No. 562.
Petroleum, Oliphant, No. 580.
San Angelo meteorite, Preston, No. 640.
Texas oil horizons, Dumble, No. 241.
Texas Permian, Cummins, No. 180.
Utah.
Abrasive materials, Parker, No. 598.
Contributions to paleontology, Lucas, No. 501.
Gold mines of Mercur, Maguire, No. 516.
Igneous phenomena in Tintic Mountains, Smith, No. 710.
Natural bridge in Utah, Winslow, No. 925.

Vermont.
Cambrian faunas, Matthew, No. 535.
Stone, Day, No. 227.
Washington limestone, Richardson, No. 655.

Virginia.
Earthquake shocks in Giles County, Campbell, No. 130.
Felsophyre and basalt in Paleozoic rocks, Darton and Keith, No. 198.
First geological excursion along Chesapeake, Mathews, No. 533.
Fossil mollusks and diatoms from Dismal Swamp, Woolman, No. 934.
Geology of Massanutten Mountain, Spencer, No. 723.
Gold mining in southern Appalachians, Nitze and Wilkes, No. 579.
Marine Cretaceous at Norfolk, Darton, No. 195.
Tazewell folio, Campbell, No. 127.
Weathering of diabase, Watson, No. 853.

Washington.
Coal fields of Puget Sound, Willis, No. 894.
Deu Free lode, Landes, No. 474.
Drift phenomena of Puget Sound, Willis, No. 896.
Genesis of iron ores, Kimball, No. 437.
Glacial phenomena in Okanogan County, Dawson, No. 225.
Glaciers of Mount Rainier, Russell, No. 676.
Lake Chelan, Gannett, No. 286.
Republic mine, Joseph, No. 400.
Rocks of Mount Rainier, Smith, No. 709.
Stratigraphy and structure of Puget group, Willis, No. 895.
Terrace of Columbia, Russell, No. 677.

Washington—Continued.
Topographic features due to landslides, Russell, No. 678.

West Indies.
Archaeon character of nuclei of Antilles, Fraser, No. 278.
Barbados manjak, Merrivale, No. 558.
Occurrence of manjak, Merrivale, No. 544.
West Indian bridge, Spencer, No. 738.

West Virginia.
Stone, Day, No. 227.
Subterranean temperatures at Wheeling, Hallock, No. 328.
Tazewell folio, Campbell, No. 127.

Wisconsin.
Dentition of Devonian Ptyctodontidae, Eastman, No. 246.
Devonian crinoids and blastoids, Weller, No. 862.
Dike features of Gogebic Range, Boss, No. 93.
Driftless region of Wisconsin, Squier, No. 740.
Geology of St. Croix Dalles, Berkey, Nos. 73, 74.
Lake Superior iron ore region, Winchell, No. 913.
Pre-Cambrian igneous rocks, Weidman, No. 875a.
St. Croix River Valley, Elftman, No. 251.

Wyoming.
Building stones and clay of Wyoming, Knight, No. 447.
Conditions affecting geyser eruptions, Jaggar, No. 901.
New Jurassic vertebrates, Knight, Nos. 445, 446.
New species of Ceratopsia, Marsh, No. 523.
Petroleum, Oliphant, No. 580.
Sacrum of Morosaurus, Williston, No. 905.
Skeleton of Coryphodon radians, Osborn, Nos. 587, 584.
Soda deposits of Wyoming, Knight, No. 448.
Standing fossil forests, Knowlton, No. 454.
Wyoming oil fields, Lakes, No. 473.
Wyoming copper region, Kennedy, No. 414.