BIBLIOGRAPHY AND INDEX

OF

NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY, AND MINERALOGY

FOR

THE YEAR 1895

BY

FRED BOUGHTON WEEKS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1896
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
DIVISION OF GEOLOGY,

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 1895, 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.
BIBLIOGRAPHY AND INDEX OF NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY, AND MINERALOGY FOR THE YEAR 1895.

By Fred Boughton Weeks.

INTRODUCTION.

The present work comprises a record of publications on North American geology, paleontology, petrology, and mineralogy for the year 1895. It is planned on the same lines as the previous bulletins (Nos. 130 and 135), excepting that abstracts appearing in regular periodicals have been omitted in this volume.

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 $\frac{1}{2}$ p., 5 l. (lines).

Index.—The subject headings, their subdivisions and arrangement, are shown in the Classified Key to the Index. They comprise geographic, geologic, mineralogic, paleontologic, and petrologic subdivisions. Under Economic Geology is given a list of 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.
LIST OF PUBLICATIONS EXAMINED.


American Geologist, Vols. XV-XVI. Minneapolis, Minn.

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


Botanical Gazette, Vol. XX. Madison, Wis.

British Association for the Advancement of Science: Reports, 1894 and 1895. London, England.


California State Mining Bureau: Bulletins, Nos. 3-7. Sacramento, Cal.


Engineering and Mining Journal, Vols. LIX-LX. New York, N. Y.


LIST OF PUBLICATIONS EXAMINED.


Iowa, State University, Laboratories of Natural History: Bulletin, Vol. III, No. 3. Iowa City, Iowa.

Johns Hopkins University: Circulars, Vol. XIV. Baltimore, Md.


Kansas University Quarterly, Vol. III, Nos. 3-4; Vol. IV, No. 1. Lawrence, Kans.


Neues Jahrbuch für Mineralogie, Geologie, und Paläontologie: 1894, Bänden I and II, Hefte 1-3; 1895, Bänden I and II, Hefte 1-3. Stuttgart, Germany.


Paleontographica, Band XLI, Lieferung 3-6. Stuttgart, Germany.


Popular Science Monthly, Vols. XLVI-XLVII. New York, N. Y.


School of Mines Quarterly, Vol. XVI. New York, N. Y.


Scientific American, Vols. LXXII-LXXXIII. New York, N. Y.

Scientific American Supplement, Vols. XXXIX-XL. New York, N. Y.

Smithsonian Institution: Contributions to Knowledge, Nos. 980 and 989; Miscellaneous Collections, Nos. 854, 971, and 972. Washington, D. C.


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   Describes the formation of these capes and discusses their origin.

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   Describes the general distribution of the Laurentian rocks of Canada and
   the lithologic character and relations of the two divisions which comprise the formation. Describes the petrographic characters and gives
   the chemical analysis of the gneiss and compares it with chemical analyses of gneiss and slate from other regions. Reviews the evidence as to
   the sedimentary origin of the gneiss.

3 Preliminary report on the geology of a portion of central Ontario, situated in the counties of Victoria, Peterborough, and
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   cluding an occurrence of nepheline syenite, mentions the occurrences of
   iron-ore bodies, and gives their chemical analyses.

4 Agassiz (Alexander). Note on the Florida reef. [Letter to J. D.
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   Describes the formation of the coral reefs of Florida.

5 On underground temperatures at great depths.
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   mines at Calumet, Mich., and gives the temperatures at various depths
   down to 4,580 feet.

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   Describes the aeolian hills and dunes, the sounds and lagoons, the distri­
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   Describes Solarium elaboratum Conrad vir bimixta and S. planiforme n. sp.

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10 — Notes on a collection of Silurian fossils from Cape George, Antigonish County, Nova Scotia, with descriptions of four new species.
   Describes Serpulites longissimus n. var., Tentaculites canadensis n. sp., Discina nova-scotica n. sp., D. fletcheri n. sp., and D. orientalis n. sp., with notes on other fossils.

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   Describes the ore bodies in this district carrying gold and silver.

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14 — The Neocene stratigraphy of the Santa Cruz Mountains of California.
   Describes the topographic features of the mountains and reviews the literature regarding them. Gives a general geologic description of the region, including a columnar section, and the lithologic characters and distribution of the various deposits which form the range. Discusses the evidences as to the geologic age of these beds and gives lists of fossils that have been collected.
B.

15 Bache (Franklin). Coal sections developed by recent operations in Wise County, Virginia.  
Describes the coal developments and gives sections from various parts of the coal area of the county.

Gives an account of the natural gas and petroleum industry of Kansas.

Describes the character and distribution of the granite and of the Cambrian, Devonian, and Triassic formations. Includes a description of the economic minerals of the region.

18 Bain (Harry Foster). Cretaceous deposits of the Sioux Valley [Iowa].  
Describes the distribution and lithologic characters of the Cretaceous beds of northwestern Iowa and gives the sections exposed at various localities.

19 — Geology of Keokuk County [Iowa].  
Describes the topography and drainage of the county and the lithologic and stratigraphic features of the Carboniferous and Pleistocene formations. Gives vertical sections of different localities, and describes the occurrence of coal, clay, building stone, water supply, road materials, and mineral paint.

20 — Geology of Mahaska County [Iowa].  
Describes the physiography and drainage of the region and the stratigraphy and lithology of the rocks of the Carboniferous and Pleistocene formations. Gives typical vertical sections, and discusses the geologic structure. Includes remarks on the occurrence of coal, clay, lime, building stone, soils, water supply, and road materials.

21 — Central Iowa section of the Mississippian series.  
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Describes the characteristics of Glacial and pre-Glacial erosion of drumlins and discusses the origin of channels on certain drumlins in Massachusetts.

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35 Beadle (H. M.). The Iron Mountain mine [Montana].


Brief description of the silver-lead ore bodies of this district in Missoula County, Mont.

36 Becker (George F.). Gold fields of the southern Appalachians.


Describes the geography of the region and gives a history of mining operations and statistics. Describes the characters of the rocks of the gold fields, their geologic structure, the gangue minerals, veins, impregnations, and placers. Includes descriptive notes of the Georgian belt, South Mountain mining district, North Carolina, and the Carolinian belt, and a review of the history of the gold fields of the British maritime provinces and of the Green Mountains. A bibliography of the subject is also given.

37 — The torsional theory of joints.


Describes the phenomena of joints, reviews some of the explanatory hypotheses and the results of the author's experiments, and discusses the torsional theory and the character of torsional rupture.

38 — Distribution of gold deposits in Alaska.

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Gives a brief description of the gold deposits of Alaska.

39 Beecher (Charles E.). Further observations on the ventral structure of Triarthrus.

Am. Geol., vol. xv, pp. 91-100.

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Mentions the genera allied to Trinucleus and the homologous features in other trilobites. Describes and figures the appendages of Trinucleus concentricus, found associated with Triarthrus becki in the Utica slate near Rome, N. Y.
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Describes the physical characteristics, age, and appearance of the eroded rocks on Grand Manitoulin and adjacent islands. Discusses the relations of the erosion forms to rock variety and the causes which have produced this peculiar phenomena.

44 Berkey (Charles P.). Notes on Minnesota minerals.
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Gives a brief account of the geology of the region and of the characteristics of the ore bodies.

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Discusses the geologic structure of the region.

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Brief description of a deposit in New Mexico and discussion of the origin of similar bauxites.

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49 Bonney (T. G.). On the mode of occurrence of Eozoon canadense at Cote St. Pierre [Canada].
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50 Boyd (C. R.). Correlations in the coal rocks west of Pocahontas, Flat Top, Virginia.
Remarks on the occurrence of a conglomerate overlying the coal in this region and its bearing on the correlation of the coals.

51 —— [The torsional theory of joints.]
In discussion of paper by G. F. Becker on the same subject.
52 Boyer (Charles S.). A fossil marine diatomaceous deposit at St. Augustine, Florida.
Brief notes on diatoms from an artesian well at this place.

53 — A diatomaceous deposit from an artesian well at Wildwood, N. J.
Gives a list of diatoms occurring in Miocene strata and describes two new species.

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Describes the occurrence of copper ores in the southwestern portion of Tennessee.

55 — The Arbacoochee gold district, Alabama.
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Describes a recent discovery of gold in Cleburne County.

56 — Mineral resources on the Southern Railway from Atlanta [Georgia] to Birmingham [Alabama].
Gives a brief description of some of the gold mines of the region.

57 Brigham (Albert P.). Drift bowlders between the Mohawk and Susquehanna rivers.
Describes the topographic features of the Oriskany and Chenango valleys and adjacent territory, in central and southern New York, and mentions the sedimentary formations occurring in the district. Describes the distribution of the bowlders derived from the Archean, Oneida, Lower Helderberg, Oriskany, and Corniferous rocks, and gives a summary of the facts concerning the distribution of the bowlders.

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60 Brown (R. G.). The ore deposits of Butte City [Mont.].
Describes the topography of the city and the distribution and character of the several copper and silver belts.

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Describes the character and occurrence of gold placers in California.
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64 Buell (Ira M.). Bowlder trains from the outcrops of the Waterloo quartzite area [Wisconsin]. Wis. Acad. Sci. Arts and Letters, Trans., vol. x, pp. 485-509, pls. xii-xvi. Describes the geology of the quartzite area, the evidence of glacial distribution, and the character and distribution of the bowlder trains in the region, in southern Wisconsin.

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67 —— Maquoketa shales in Delaware County [Iowa]. Abstract: Iowa Acad. Sci., Proc., vol. ii, pp. 40-42. Describes the character and occurrence of these beds, and gives a list of the fossils collected.


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71 Cazin (F. M. F.). [The genesis of ore deposits.]
    In discussion of paper by F. Posepny on the same subject.

72 Chalmers (Robert). On the glacial lake St. Lawrence of Prof. Warren Upham.
    States the author's reasons for considering that there did not exist a glacial lake occupying the St. Lawrence Valley from Quebec to Lake Ontario, and that there are no evidences of a movement of a great ice sheet over this region at any time during the Glacial period.

73 Chamberlin (T. C.). Recent glacial studies in Greenland.
    Compares the glaciation of the mainland of North America and that of Greenland, and discusses the relation of geologic formations of the region to glaciation. Describes the stratification of the glaciers and gives a discussion of the causes of their movements. Describes eskers, kames, drumlins, and other glacial phenomena of Greenland.

74 — Notes on the glaciation of Newfoundland.
    Describes the local character of the glacial phenomena of Newfoundland.

75 — Glacial studies in Greenland.
    Jour. of Geol., vol. iii, pp. 61-69, 198-218, 469-480, 565-582, 668-681, and 833-843.
    Describes the topographic and geologic features of the western coast of Greenland, and discusses their bearing on the glacial phenomena. Describes the characteristics of the various glaciers which occupy this portion of Greenland. Includes sketch maps of portions of the region and many illustrations of the glacial phenomena from photographs.

76 — The classification of American glacial deposits.
    Jour. of Geol., vol. iii, pp. 270-277.
    Describes the Kansan, Aftonian, Iowa, Toronto, and Wisconsin formations and the later deposits.

77 Clark (Ellis). The silver mines of Lake Valley, New Mexico.
    Describes the occurrence of Silurian and Carboniferous formations in this district and the character and distribution of the associated igneous rocks. Describes the mining operations and gives several cross sections of ore bodies, accompanied by a topographic and geologic map.
78 **Clark** (William Bullock). Cretaceous deposits of the northern half of the Atlantic Coastal Plain.


Describes the character and distribution of the Raritan, Matawan, Navesink, Redbank, Rancocas, and Manasquan divisions of the Cretaceous formation in portions of New Jersey, Delaware, and Maryland.

79 **Clarke** (Frank W.). The constitution of the silicates.


Discusses the constitution of silicate minerals, with special regard to their structural formulae.

80 **Clarke** (John M.). "Cephalopod beginnings."

*Am. Geol.*, vol. xv, pp. 125-128 (correspondence).

Discusses the recent reviews of the author's papers on the structure of Orthoceras and that of Bactrites and on the genus Nanno.

81 **Claypole** (E. W.) On a new specimen of Cladodus clarki.


Describes and figures a specimen of Cladodus clarki from the Cleveland shale of Ohio.

82 Recent contributions to our knowledge of the cladodont sharks.


Reviews the descriptions of the cladodont sharks from material found in Carboniferous rocks, and describes some of their characteristics from more perfect material from the Cleveland shale of Ohio.

83 **Actinophorus clarki** Newberry.

*Am. Geol.*, vol. xvi, pp. 20-25, pl. ii.

Describes additional features of this species from material found in the Cleveland shale of Ohio.

84 The cladodonts of the Upper Devonian of Ohio.


Gives a brief discussion of the characters of cladodonts.

85 The great Devonian placoderms of Ohio, with specimens.


Gives brief notes on certain fossil fishes from the Devonian rocks of Ohio.

86 **Clements** (J. Morgan). The volcanics of the Michigamme district of Michigan (preliminary).

*Jour. of Geol.*, vol. iii, pp. 801-822.

Reviews the previous work done in this district and describes the succession of the formations and the petrographic characters of apandesite, the tuffs and breccias, and the acid volcanics. Discusses the nomenclature of certain rock types. Includes a preliminary map of a part of the district.

87 **Clerc** (F. L.). [The lead and zinc deposits of Missouri.]


Makes a correction of certain statements made by A. Winslow, in a paper on the same subject.
Jour. of Geol., vol. iii, pp. 622-645.
Describes the glacial deposits of the region and gives lists of the species of the fauna and flora collected. Discusses the probable character of the climate and the bearing of the data on the theory of distinct ice ages separated by mild inter-Glacial times.

89 Collie (George L.). The geology of Conanicut Island, Rhode Island.
Describes the occurrence of slate, granite, arkose, schist, and dike rocks and their microscopic characters.

90 Comstock (Theodore B.). Notes on Arizona geology.
Comprises general remarks on the geology of Arizona.

91 Coöper (J. G.) Catalogue of California fossils (Parts ii-v).
Cal. State Mg. Bureau, Bull. No. 4, 1894, pp. 65, pls. i-v.
Part II is a bibliography of fossil Mollusca of California. Part III contains a list of described species of Tertiary and Quaternary Mollusca found in the State since 1888. Part IV gives notes on Cretaceous and Tertiary fossils from Orange County. Part V contains descriptions and figures of new Cretaceous and Tertiary species from California.

Describes a number of new species found in Miocene strata of the Atlantic coastal plain.

93 — The reptilian order Cotylosauria.
Describes the characters of this order and gives a list of the genera comprising its four families. Describes a number of new species, mainly from the Permian of Texas.

94 — On some Pleistocene Mammalia from Petite Anse, La.
Describes new species of Myolodon and Equus.

95 — The fossil Vertebrata from the fissure at Port Kennedy, Pa.
Describes the general character of the vertebrate remains found in this cave and the characters of two new species.

96 Corning (Frederick G.). An Idaho silver-gold camp.
Eng. and Mg. Jour., vol. lx, p. 244.
Gives a brief account of the ore bodies in the Florida Mountain district, Idaho.

Describes Scutollaster cretaceus n. gen. et sp., from the Fox Hills division of the Cretaceous, near Colorado Springs, Colo.

Am. Geol., vol. xvi, pp. 162-165.

Describes the lithologic character of these beds in Saline County, Kans., and gives a list of the fossils collected.

99 — A study of the Belvidere beds [Kansas].

Am. Geol., vol. xvi, pp. 337-385.

Discusses the use of the term Belvidere. Describes the lithologic and faunal characters of the different subdivisions of the Belvidere beds and reviews the classification of the Comanche terranes.

100 Crosby (William O.). Geology of the Boston Basin. Part II. Hingham [Mass.].


Describes the topography, character, and distribution of the granite and sedimentary rocks. Gives a detailed account of the geology of Hingham and discusses the geologic age of the formations. Describes the glacial geology. The paper contains three colored geologic maps.

101 — A classification of economical geological deposits.


Reviews criticisms of R. W. Raymond on a former paper on the same subject.

102 Cross (Whitman). Geology and mining industries of the Cripple Creek district, Colorado. Part I. General geology of the Cripple Creek district, Colorado.


Chapter I (introduction) describes the geographic position and geologic character of the district, and its recent physiographic changes.

Chapter II.—Rock formations. Describes the petrographic characters of granite, schist, diabase, phonolite, nepheline-syenite, augite-syenite-porphyrý, andesite, tuff, breccia, rhyolite, and the High Park lake beds.

Chapter III.—The Cripple Creek volcano. Describes the constitution and distribution of the fragmental materials and the character of the volcanic phenomena.

Chapters IV and V.—Comprise a description of the distribution of the volcanic rocks in the central area and its outlying districts.


Describes the occurrence of eskers at Ramapo, in northeastern New Jersey.

104 — The erosive action of ice.


Quotes the opinions of a large number of writers on glacial erosion, citing the publications, and giving the author's conclusions.

105 Cummins (W. F.). A question of priority.

Am. Geol., vol. xv, pp. 395-396 (correspondence).

Discusses the question of priority in the use of the term “Goodnight” to distinguish certain beds between the Loup Fork and Blaco, in Texas, and the term “Palo Duro,” employed by W. B. Scott and in Dana’s Manual of Geology.
106 Cushing (Henry P.). Faults of Chazy Township, Clinton County, New York.


Describes the general features of the district and of the Cambrian and Silurian formations. Describes the three classes of faults, and discusses the cause of the nonappearance of the Calciferons at Chazy village. The paper is accompanied by a geologic map of Chazy Township.

D.


Describes the characters and distribution of the genus Gnathodon, and also the characters of a number of living and fossil species.

108 —— Note on the Atlantic Miocene.


109 Darton (Nelson Horatio). Artesian well prospects in eastern Virginia, Maryland, and Delaware.


Presents a map showing the distribution of artesian wells, and also four cross sections of the region. Describes the character and distribution of the Pleistocene, Tertiary, and Cretaceous strata, and discusses the conditions affecting subterranean waters. Gives the records of many well borings in the region.


Describes the occurrence of the dike in the Salina formation. Refers to the previous descriptions of this dike rock and describes its petrographic characters. Presents a table showing its chemical analysis, and of serpentine from Syracuse and mica-peridotite from Kentucky. Gives the records of various wells, showing the thickness of sedimentary strata through which the dike must have penetrated.

111 Davis (Floyd). The coal supplies of Polk County, Iowa.

Eng. and Mg. Jour., vol. lix, pp. 149-150.

Describes the character and distribution of coal beds in this county.

112 Davis (William Morris). The ancient outlet of Lake Michigan.


Reviews previous descriptions of the glacial history of the Great Lakes region and describes the glacial phenomena of the country adjacent to Lake Michigan in Illinois.

113 Dawson (George M.). Inter-Glacial climatic conditions.

Am. Geol., vol. xvi, pp. 65-66.

Discusses the evidence of the plant remains found at Toronto, Ont., in its bearing on the question of inter-Glacial climatic conditions.

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114 Dawson (George M.) Note on the glacial deposits of southwestern Alberta. Jour. of Geol., vol. iii, pp. 507-511. Discusses the relations of the drift from the Laurentian area with drift along the eastern slopes of the Rocky Mountains.

115 — Note on the amount of elevation which has taken place along the Rocky Mountain range in British America since the close of the Cretaceous period. [Reply to a letter from J. D. Dana.] Am. Jour. Sci., 3d ser., vol. xlix, pp. 463-465. Describes briefly the infolding of the Cretaceous rocks with the Paleozoic in the Rocky Mountains. Considers that the amount of elevation varied in different localities, and that 22,000 to 35,000 feet is a minimum estimate of the greatest elevation for the region. Discusses the evidences of movement in Eocene and Miocene times.


118 Derby (Orville A.). Constituents of the Cañon Diablo meteorite. Am. Jour. Sci., 3d ser., vol. xlix, pp. 101-110. Describes the results of the several chemical analyses made of the material and concludes that the mass treated did not contain diamonds or anything remotely suggestive of them.


121 — Smith (A. D. W.), Lesley (J. P.), and. [Carboniferous formation, Pennsylvania.] Pa. Geol. Surv., Final Rept., vol. iii, part i, pp. 1629-2152, pls. 205-395. See Lesley (J. P.), D'Invilliers (E. V.), and Smith (A. D. W.), No. 292.


Describes the lithologic character and succession of Lower Silurian rocks in the vicinity of Lake Winnipeg and gives a sketch map of this lake.

124 Dumble (E. T.). Cretaceous of western Texas and Coahuila, Mexico.


Gives a detailed section of the rocks of San Lorenzo, Coahuila. Describes the lithologic characters and names some of the fossils found in the Bosque, Fredericksburg, and Washita divisions of the Lower Cretaceous. Describes the distribution of the Dakota, Colorado, and Montana divisions of the Upper Cretaceous in Texas. Gives a general section of the Montana rocks and a list of fossils determined by Mr. T. W. Stanton.

125 — Volcanic dust in Texas.


Describes the occurrence of volcanic dust in material of which the larger part is formed of diatoms. Refers to the description of volcanic dust by H. W. Turner and quotes from Professor Cope as to the geologic age of the deposits from which the volcanic dust was obtained.

126 Earle (Charles), Osborn (H. F.) and. Fossil mammals of the Puerco beds.


See Osborn (H. F.) and Earle (Charles) No. 362.


Describes the occurrence of upper Miocene clay containing marine Bacillariaceae on Long Island.

128 Eldridge (George H.). A geological reconnaissance across Idaho.


Describes the topography of central Idaho, the drainage systems of the Snake and Columbia rivers, and the occurrence of granite and metamorphic and unaltered sedimentary rocks. Discusses the general structural features. Describes the gold and silver deposits and coal veins of the region.

129 Elftman (Arthur Hugo). Notes upon the bedded and banded structures of the gabbro and upon an area of troctolite.


Describes the megascopic characters and field relations of gabbro in northeastern Minnesota and its microscopic features.

130 Ellis (R. W.). The Potsdam and Calciferous formations of Quebec and eastern Ontario.


Describes the character and distribution of the Potsdam and Calciferous rocks in the Ottawa and St. Lawrence basins and also of the Cambrian in eastern Quebec.
131 **Ells** (R. W.). The Bensselaer grit plateau.

Reviews a paper by T. Nelson Dale on the same subject and refers to the work of J. W. Dawson in the same region and in the vicinity of Quebec.

132 — How rocks are formed.

Ottawa Nat., vol. ix, pp. 157-166.
Discusses the theories of rock formation and describes the process of formation of the deposits in the vicinity of Ottawa, Canada.

133 — Notes on recent sedimentary formations on the Bay of Fundy coast [Nova Scotia].

Describes beds of limestone and shale overlying the trap rocks of the region.

134 **Emerson** (Benjamin Kendall). A mineralogical lexicon of Franklin, Hampshire, and Hampden counties, Mass.

Consists of a condensed history of minerals occurring in these counties, chemical analyses of some of the species, and a bibliography of the literature.

135 — Illustrations of peculiar mineral transformations.

Mentions the occurrence of serpentine pseudomorphs after olivine and calcite pseudomorphs after salt, and describes the puckering of corundum crystals around allanite.

136 **Emmons** (Samuel Franklin). Economic geology of the Mercur mining district, Utah. Introduction. The Oquirrh Mountains.

Describes the topography and gives an account of the discovery, development, and production of the mining district. Describes the structure of the range, the occurrence of the sedimentary and igneous rocks and the general economic geology of the district.

137 **Fairbanks** (Harold W.). On analcime diabase from San Luis Obispo County, California.

Univ. of Cal., Dept. of Geol., Bull., vol. i, pp. 273-300, pl. 16.
Describes the field relations, contact metamorphism, and the microscopic and chemical characters of these rocks.

138 — The stratigraphy of the California Coast ranges.

Jour. of Geol., vol. iii, pp. 415-433.
Describes the character, position, and faunal relations of the Golden Gate series and discusses the evidences of a nonconformity between the Knoxville and Golden Gate beds, between the Chico and Knoxville, and between the Miocene and Chico-Tejón series.
139 Fairbanks (Harold W.). Review of our knowledge of the geology of the California Coast ranges.


Discusses the use of the term Coast ranges as employed by different geologists, gives a summary of previous work, and compares the age and relations of the Coast ranges and Sierra Nevada. Describes the character of the crystalline basement complex, the lithologic character, extent, and relations of the pre-Cretaceous series, the alteration of the eruptives, and the characteristics and relations of the rocks of the Klamath Mountains. Discusses the general features of the orpographic movement, the paleontologic and stratigraphic evidence of the age of the sedimentary series, and the relations of the Cretaceous and pre-Cretaceous strata. Describes the Eocene and Miocene formations of these ranges.

140 — Auriferous conglomerate in California.


Describes the occurrence of an auriferous conglomerate in Siskiyou County, its geologic relations, and the structure of the region.


Presents a hydrographic map of western New York, and in a table gives a list of extinct lakes, their altitudes, and estimated dimensions. Describes the history and phenomena of some of these glacial lakes.

142 — Lake Newberry the probable successor of Lake Warren.


Discusses the evidences which indicate the formation, extent, and duration of Lake Newberry.

143 — The kame-moraine at Rochester, N. Y.

Am. Geol., vol. xvi, pp. 39-51, with map.

Describes the location, topographic features, and the structure and composition of the Pinnacle Hills, in the vicinity of Rochester. Describes their morainic character and the process of their formation, and compares them with neighboring kame areas.

144 Ferrier (W. F.). Crystals.


Describes the formation of crystals and reviews the literature of the subject.

145 Foerste (Aug. F.). On Clinton conglomerates and wave marks in Ohio and Kentucky. With a résumé of our knowledge of similar occurrences in other Silurian strata of these States, and their evidence upon probable land conditions.

Jour. of Geol., vol. iii, pp. 50-60, and 169-187.

Gives a description of observations, by the author and others, of rounded limestone pebbles and wave marks in the Cincinnati, Oneida, Medina, and Clinton groups in Ohio and Kentucky. Includes remarks on the occurrence of the Upper Silurian and Devonian formations in the same region, a résumé of the facts regarding the geographic distribution of the pebbles and wave marks, and the conclusions to be drawn from them concerning the existence of land areas in Lower Silurian and Clinton times.
146 Foote (Warren M.). Note on the occurrence of leadhillite pseudomorphs at Granby, Mo.
Describes pseudomorphs after calcite and galena.

147 — Preliminary note on a new alkali mineral.
Describes briefly the chemical and crystallographic characters of a new mineral from California, for which the term “northupite” is proposed.

148 — Preliminary note on a new alkali mineral.
Describes the crystallographic and chemical characters of northupite, found at Borax Lake, California.

149 Frech (F.). Das Profil des Grossen Colorado-Canon.
Neues Jahr. fur Min., etc., 1895, Band II, pp. 153-156.
Gives the vertical section of the Cambrian rocks of Colorado canyon and a description of the geologic history of the region.

150 Freeman (H. C.). The Ammon mines, Fergus County, Montana.
Describes the occurrence of gold on the contact of limestone and porphyry in this locality.

151 — Boulder mining district, Montana.
Gives a historical review of mining in this district and a brief description of the gold ores.

152 Fultz (Francis M.). Erosion during the deposition of the Burlington limestones.
Am. Geol., vol. xv, pp. 128-130 (correspondence).
Describes deposits near Burlington, Iowa, which indicate a cessation of deposition and erosion, and renewal of deposition during the formation of the Burlington limestones.

153 — How old is the Mississippi?
Gives brief notes on the geologic history of this river.

154 — Formation of the flint beds of the Burlington limestones.
Brief note on the occurrence of these beds.

155 — Coincidence of present and pre-Glacial drainage system in extreme southeastern Iowa.
Comprises brief notes on the drainage systems of the region.

156 — Extension of the Illinois lobe of the great ice sheet into Iowa.
Discusses the general features of the ice invasion of the State.

157 — Glacial markings in southeastern Iowa.
Describes the character and directions of the markings.
158 Geikie (James). The classification of European glacial deposits.
Jour. of Geol., vol. iii, pp. 241-269.
Describes the glacial phenomena of Europe and gives the author's classification.

159 Gibson (A. M.). Report upon the Coosa coal field [Alabama].
Describes the topographic features of the coal field, with detailed description of the occurrence of coal seams. Includes a sheet of cross sections, showing the geologic structure and succession in the region.

160 Gilbert (Grove Karl). Lake basins created by wind erosion.
Jour. of Geol., vol. iii, pp. 47-49.
Discusses the evidences of the action of the wind in forming small lake basins in the arid portion of the Arkansas basin.

161 Sedimentary measurement of Cretaceous time.
Jour. of Geol., vol. iii, pp. 121-127.
Describes certain alternations of strata in Colorado, correlates these with the precession of the equinoxes, and from this deduces an estimate in years of a portion of Cretaceous time.

162 New light on isostasy.
Jour. of Geol., vol. iii, pp. 331-334.
Discusses the results obtained by Mr. G. R. Putnam in the measurement of gravity by means of the pendulum.

163 A rock fissure.
Describes a rock fissure in Carboniferous limestone in Arizona, considered to be the result of tension of the rock. Describes the character of the faults in the vicinity.

164 and Gulliver (F. P.). Tepee Buttes.
Describes the character of the Pierre group of Colorado, in which the buttes occur, the distribution and general features of the buttes, and the lithologic and faunal characters of the tepee rock. Discusses the origin of the cores and the conditions affecting their distribution, form, and size, and compares them with buttes of other origin.

165 Gilpin (E.). Note on the Sydney coal field [Nova Scotia].
Contains description of a subordinate coal basin within the Sydney coal field.

166 Girty (George H.). Development of the corallum in Favosites forbesi var. occidentalis.
The material on which this paper is based was found in the Niagara shales of Waldron, Ind. Describes the development of the coralla in Favosites forbesi, F. spiniferus, and F. conicus, and discusses the evidences, which show to what extent the development observed in F. forbesi is characteristic of Favosites as a genus.

168 **Gordon** (Charles H.). Buried river channels in southeastern Iowa. Iowa Geol. Surv., vol. iii, 2d Ann. Rept., pp. 239-255. Describes the drainage of the region and gives the section exposed at various localities and in several well borings. Describes the history of the drainage diversion.

169 — Geology of Van Buren County [Iowa]. Iowa Geol. Surv., vol. iv, 3d Ann. Rept., pp. 201-254, pls. vi-vii, figs. 19-26, with geologic map. Describes the physiography and drainage of the region and the lithologic and stratigraphic characters of the Carboniferous and Pleistocene formations. Gives vertical sections of several well borings and describes the occurrence of coal, clay, and building stone.

170 — Stratigraphy of the St. Louis and Warsaw formations in southeastern Iowa. Jour. of Geol., vol. iii, pp. 289-311, with map. Reviews the earlier geologic descriptions of this region, gives a cross section, and describes the lithologic character of the exposures at a number of localities. Describes the characteristics of the formations and the unconformities above and below the St. Louis limestone. Discusses the origin of the brecciated character and dolomitization of this limestone.

171 **Gosling** (Edgar B.). A treatise on ozokerite. School of Mines Quart., vol. xvi, pp. 41-68. Describes its properties and the geology of portions of Europe and of the central Rocky Mountain States in which it occurs. Describes the process of treatment and its uses.


175 **Grant** (U. S.). The name of the copper-bearing rocks of Lake Superior. Am. Geol., vol. xv, pp. 192-194 (correspondence). Discusses the use of the terms Keweenawan and Nipigon to designate the copper-bearing rocks of Lake Superior, and quotes from several papers to show that the name Keweenawan should be adopted.

176 — **Winchell** (H. V.) and. Preliminary report on the Rainy Lake gold region. Minn. Geol. and Nat. Hist. Surv., 23d Ann. Rept., pp. 36-105. See Winchell (H. V.) and Grant (U. S.), No. 548.


179 —— Origin of the Lower Mississippi.

180 Gulliver (F. P.), Gilbert (G. K.) and. Tepee buttes.

181 Gurley (W. F. E.), Miller (S. A.) and. New and interesting species of Paleozoic fossils.

H.

182 Hall (C. W.). Mineral alterations in the granitic rocks of the Northwestern States.

183 —— and Sardeson (F. W.). The Magnesian series of the Northwestern States.

184 Halse (Edward). The silver district of Tehuilotepec, State of Guérerro, Mexico.
Eng. and Mg. Jour., vol. 1, pp. 197-199. Describes the occurrence of silver ores in this region and the character of the mining and ore reduction processes.

185 Harris (Gilbert D.). New and otherwise interesting Tertiary Mollusca from Texas.

186 Harris (Hunter L.). History of the Atlantic shore line.
Elisha Mitchell Sci. Soc., Jour. 1894, part ii, pp. 33-50. Discusses the evidences of the changes that have affected the Atlantic shore line of the United States during geologic times.
187 Hastings (John B.). The Atlanta lode, Idaho.
   Describes the occurrence of gold ore at this locality.

188 — Subclassification of xenogenous ore deposits.
   Discusses some recent proposed classifications of ore deposits.

189 Haworth (Erasmus). The stratigraphy of the Kansas Coal Measures.
   Describes the character and distribution of the strata which form the Coal Measures, and discusses the conditions of their deposition. Includes a generalized vertical section of the Coal Measures.

190 — Division of the Kansas Coal Measures.
   Discusses the evidences of changes in the strata upon which to base a subdivision of the Coal Measures.

191 — The coal fields of Kansas.
   Describes the area of the coal fields and the geologic position of the coal beds, and discusses the physical and chemical properties of the coals.

192 — Stratigraphy of the Kansas Coal Measures.
   Describes the distribution of the Mississippian formation which forms the floor of the Coal Measures. Gives the thickness of the various series of limestones and shales which comprise the Coal Measure formation, as shown by outcrops and records of well borings, and describes their distribution. Gives lists of fossils collected from several horizons. Discusses the ratio of limestone to shales. Includes a map showing the line of outcrop of the various subdivisions, a generalized vertical section of the Coal Measures, and the section shown by a boring at Topeka to a depth of about 1,600 feet.

193 — Oil and gas in Kansas.
   Describes the past production of oil and gas in southeastern Kansas and the character and distribution of the Coal Measure shales and sandstones in which they occur. Discusses the relation of oil and gas to anticlinals and synclinals and the evidences as to their original source.

194 Hay (O. P.). Description of a new species of Petalodus (P. securiger) from the Carboniferous of Illinois.
   Jour. of Geol., vol. iii, pp. 561-564.
   Describes and figures the characters of the dentition of Petalodus securiger and compares it with P. destructor.

   Describes the hydrographic, geologic, and topographic features and water-bearing formations of a portion of western Kansas and Nebraska and eastern Colorado.
196 **Hayes** (Charles Willard). Bauxite.

Includes notes on the occurrence of bauxite in New Mexico and Arkansas and a description of the topography, stratigraphy, and structure of the Georgia and Alabama bauxite region, illustrated by a geologic map and vertical section. Describes the ores and associated deposits and discusses the origin of bauxite deposits, the source of the material, and the age of the strata.

197 — The Tennessee phosphates.

Describes the character and occurrence of the phosphate in Devonian strata and the local character of the various deposits. Discusses the origin of the deposits. Accompanied by a map of the phosphate region and vertical sections.

198 — Stevenson folio—Alabama, Georgia, Tennessee.

Describes the physiography of the region, the character and distribution of the Silurian, Devonian, and Carboniferous rocks, and the geologic structure of the region. Describes the occurrence of coal, iron, building stone, road material, clay, and the character of the soils. Contains topographic, colored areal geologic, economic geologic, and structure section maps and vertical sections.

199 — Cleveland folio, Tennessee.

Describes the geography and stratigraphy of the region, the character and distribution of the Algonkian, Cambrian, Silurian, Devonian, and Carboniferous rocks, the geologic structure and the occurrence of iron, lead, building stone, clay, and soils. Contains topographic, colored areal geologic, economic geologic, and structure section maps and a sheet of columnar sections.

200 — Pikeville folio, Tennessee.

Describes the geography, topography, and stratigraphy of the region, the character and distribution of the Silurian, Devonian, and Carboniferous rocks, the geologic structure and the occurrence of coal, iron, building stone, clay, and soils. Accompanied by topographic, colored areal geologic, economic geologic, and structure section maps and a sheet of columnar sections.

201 — McMinnville folio, Tennessee.

Describes the geography, topography, and stratigraphy of the region, the character and distribution of the Silurian, Devonian, and Carboniferous formations, the geologic structure, and the occurrence of coal, iron, building stone, clay, and soils. Gives a generalized section and two vertical sections of the coal beds. Accompanied by topographic, colored areal geologic, economic geologic, and structure section maps.

202 — The geological relations of the southern Appalachian bauxite deposits.

Presents a geologic map of the Georgia and Alabama bauxite deposits, describes the stratigraphy, general geology, and character of the ore bodies, and discusses the origin of the deposits.
203 Heilprin (Angelo). The Port Kennedy deposit [Pennsylvania].
Discusses briefly the faunal evidence of the age of the deposit.

204 — The glaciers of Greenland.
Describes and illustrates the glacial phenomena of Greenland.

205 Hershey (Oscar H.). The Columbia formation in northwestern Illinois.
Am. Geol., vol. xv, pp. 7-24.
Describes the character and distribution of the three members of the Columbia formation, the Florence gravel, valley loess, and upland loess. Discusses the relation of the loess to the drift, the sequence of glacial history in northwestern Illinois, and the correlation with the Columbia formation in the Lower Mississippi Valley.

206 — The Devonian series in southwestern Missouri.
Am. Geol., vol. xvi, pp. 291-300.
Describes the occurrence of the Eureka shale in Arkansas and of the other Devonian rocks of the Ozark series. Discusses the evidences of elevation and subsidence in this region, and the correlations indicated by the lithologic and stratigraphic relations.

207 — River valleys of the Ozark plateau.
Am. Geol., vol. xvi, pp. 338-357.
Describes the extent and character of the Jura-Cretaceous peneplain and the Tertiary and Quaternary valleys. Discusses the cause of the meandering courses of the rivers and of the comparative straightness of the Missouri Valley. Describes the deposits of local drift in the valleys, considered to be equivalent to the Lafayette formation. Describes the post-Lafayette elevation, the Columbian formation, and the post-Columbian elevation, and gives a summary of the geologic history of the Ozark plateau since the Jurassic period.

208 — On a Devonian limestone breccia in southwestern Missouri.
Describes the character of a limestone breccia deposit in Stone County, Mo., and discusses the causes of its formation.

209 Hice (R. R.). The inner gorge terraces of the upper Ohio and Beaver rivers.
Describes the character and the process of formation of the terraces of the Ohio and Beaver rivers in Pennsylvania and the relations of the terraces and rock benches. Considers that the rock benches of the two rivers belong to the same series, and that the inner gorge was formed during two periods. Reviews the evidences which show the existence of a buried channel and the character of the alluvium. Gives a list of the principal papers on this subject.

210 Hill (Robert T.). Discovery of a dicotyledonous flora in the Cheyenne sandstone.
Contains brief remarks on the discovery of a dicotyledonous flora in the Cheyenne sandstone in the basal beds of the Comanche series in southern Kansas.
211 Hill (Robert T.). On outlying areas of the Comanche series in Kansas, Oklahoma, and New Mexico.


Reviews the previous descriptions of the Cretaceous series in this region. Gives the section at Black Hills, Comanche County, Kans., and that near Belvidere. Reviews the descriptions of these sections by Professor Cragin. Includes notes on the fossil plants by F. H. Knowlton and on the fossil Mollusca by T. W. Stanton. Compares the fauna of these beds with that of the Comanche series in Texas. Considers that these outlying beds represent the attenuated northern extension of the Washita and probably a portion of the Fredericksburg division of the Texas Comanche series.

212 — The radiolarian earths of Cuba.


Quotes from recent publications on radiolarian earths of the West Indian region and describes the determination of the radiolarian remains and their geologic age.

213 Hill (Walter Hovey). The Deadwood placer claims, Idaho.


Describes the character of these placer deposits.

214 — The gold belt of Idaho.

Eng. and Mg. Jour., vol. 1x, p. 172.

Gives a historical sketch of gold mining in Idaho and a brief description of the mining districts.

215 Hillebrand (W. F.). Calaverite from Cripple Creek, Colorado.


Gives a chemical analysis of material from the Cripple Creek mines, which shows the presence of calaverite. Includes crystallographic notes by S. L. Penfield.

216 — Chemical composition of calaverite from Cripple Creek, Colorado.


Describes the occurrence of the mineral and its chemical composition.

217 Hitchcock (C. H.). Divisions of the ice age in the United States and Canada.

Am. Geol., vol. xv, pp. 330-335 (correspondence).

Discusses the evidences of maximum glaciation during Lafayette time. Reviews recent literature on the unity of the Glacial epoch and discusses the evidences thus presented.

218 — The Connecticut sandstone group.


Gives a historical account of the use of the term "Connecticut" or "Connecticut sandstone group" to designate the Triassic areas of eastern North America.

219 — High-level gravels in New England.


Describes beach lines in the basin of Lake Memphremagog and adjacent region, which indicate the existence of glacial lakes.
   Univ. of Wis., Science ser., vol. i, pp. 109-156, pls. 4-8.
   Gives a list of papers on the subject and describes the mineralogic
   characters of quartz, arsenopyrite, calcite, smithsonite, galena, cerussite,
   sphalerite, gypsum, barite, marcasite, pyrite, azurite, malachite,
   and diamonds.

221 — Mineralogical notes. With analyses by Herman Schlundt and
   Louis Kahlenberg.
   Describes and gives the chemical composition of cerussite from Mont­
   tana, barite, manganite, and chloritoid from Michigan, and hessonite in
   a pegmatite from Connecticut.

222 Hoffman (G. Christian). Chemical contributions to the geology
   of Canada from the laboratory of the Survey.
   Gives chemical analyses of rocks and minerals from Canada.

223 A plumbiferous tetrahedrite.
   Describes the mineralogic and chemical characters of a plumbiferous
   tetrahedrite from British Columbia.

224 Hollick (Arthur). Dislocations in certain portions of the Atlantic
   Coastal Plain strata and their probable cause.
   Discusses the theories concerning the cause of the principal lines of
   disturbance in the Atlantic Coastal Plain and describes the tilted and
   folded deposits underlying portions of the terminal moraine in this
   region. Discusses the theories of mountain-making forces or ice action
   as the cause of the folding and faulting.

225 Descriptions of new leaves from the Cretaceous (Dakota
   group) of Kansas.
   Gives descriptions and figures of three new species of fossil plants.

226 A new fossil Liriodendron from the Laramie at Walsenberg,
   Colo., and its significance.

227 Holm (Theo.). On the validity of some fossil species of Lirioden­
   dron.
   Reviews the description of certain fossil plants by Arthur Hollick.

228 Hovey (E. O.). Notes on some specimens of minerals from Wash­
   ton Heights, New York City.
   Describes the characters of xenotime, monazite, and tourmaline, and
   mentions the associated minerals.
229 Hovey (Horace C.). The Isles of Shoals [New Hampshire].
Discusses the evidences of recent elevation in this region and of the
results of other dynamic forces.

230 Howell (E. E.). On two meteorites.
Describes a meteorite found in Cherokee County, Ga., and one from El
Capitan Mountains of New Mexico, and gives their chemical analyses.

In discussion of papers on "Bauxite" by Messrs. Laur and Hayes,
gives tables of production and chemical analyses of bauxite.

Am. Geol., vol. xvi, pp. 1-12, pl. i.
Gives the results of the author's study of the types from which the
genus was described and discusses the bearing of this new evidence on
the affinities of the forms of Endoceratidae.

Jour. of Geol., vol. iii, pp. 935-959.
Describes the petrographic characters and gives chemical analyses of
absarokite, shoshonite, and banakite from the Yellowstone National
Park and of similar rocks in neighboring regions.

234 — Penrose (R. A. F., jr.) and. Review of "The Penokee iron-
bearing series of Michigan and Wisconsin," by R. D. Irving
and C. R. Van Hise.
Jour. of Geol., vol. iii, pp. 221-227.

235 James (Joseph F.). The first fauna of the earth.
Reviews the early history of geologic and paleontologic research, and
gives figures of many fossils of the Cambrian formations.

236 — Remarks on Daimonelix or "Devil's corkscrew" and allied
forms.
Am. Geol., vol. xv, pp. 337-342, pls. xi-xii.
Reviews the description of this genus by E. H. Barbour, and refers to
descriptions of similar fossils from Switzerland by Oswald Heer and
to descriptions of fossils by James Hall and J. S. Newberry, which are
considered to have affinities to those above mentioned.

237 — Manual of the Paleontology of the Cincinnati group.
Continues the description of the fossils found in the Cincinnati group
begun in a former paper and noticed in the Bibliography and Index for
1892-93 and 1894.

238 Jones (Arthur J.). Record of the Grinnell deep boring [Iowa].
Describes the character of the rocks penetrated to a depth of 2,002
feet and gives a chemical analysis of the water.
Describes the occurrence of the crystals and discusses briefly their origin.

Describes new species found in Quaternary beds of Manitoba and in the Laramie of Alberta.

K.

This bibliography includes the subjects of geology, paleontology, physiography, botany, zoology, and ethnology.

Describes the physiography of the region, the character and distribution of the Ocoee group, the Cambrian, Silurian, Devonian, and Carboniferous rocks, the structure of the region, and the occurrence of marble, building stone, lime, and clay. Includes topographic, colored areal geologic, economic geologic, and structure section maps.

Describes the occurrence of pyrrhotite in these mines and discusses its origin.

Reviews the previous and contemporary work in this region. Describes the distribution and occurrence of the limestones and associated rocks. Presents cross sections of the type localities and describes the petrographic characters of the limestone, ophicalcites, hornblendic, graphitic, and other schists, and granulite.

245 — The geology of Moriah and Westports townships, Essex County, N. Y. N. Y. State Mus., Bull., vol. iii, No. 14, pp. 325-355, pls. i-iv, figs. 1-5, with geologic map.
Describes the character and distribution of the gneisses, gabbros, crystalline limestones, and Cambro-Silurian sediments, and the petrographic characters of the gneisses, limestones, black schists, gabbros, and anorthosites. Describes the characters of the iron ores of the region.

Describes the occurrence of igneous rocks and dolomite in a tunnel at this locality.
247 Kemp (J. F.). The zinc mines at Franklin Furnace and Ogdensburg, N. J.


See Darton (N. H.) and Kemp (J. F.), No. 110.

249 Kennedy (William). Iron ores of east Texas.


Gives a historical review of the iron industry of the region, describes the general geology, and discusses the age and classification of the ores. Gives many chemical analyses of iron ores, and data as to its strength and the methods of mining.

250 — The Eocene Tertiary of Texas east of the Brazos River.


Compares the Tertiary strata of Alabama and Texas and describes the character and distribution of the Tertiary rocks of Texas, including sections at many localities and lists of fossils collected. Gives a résumé of the Tertiary history of the Texas region.

251 Keyes (Charles Rollin). The origin and relations of central Maryland granites.


Describes the geologic features and petrographic characters of central Maryland granites. Describes the exposures in different parts of the region and discusses the origin and age of the granites and gneisses.

252 — Bibliography of North American Paleontology, 1888-1892.


Comprises a brief review of paleontologic literature, and author’s list of papers, a title index, and subject entries and cross references.

253 — Glacial scorings in Iowa.


Describes the glacial scorings in various parts of the State and gives a table showing the observed directions of the strie.

254 — Gypsum deposits of Iowa.


Describes the topographic and geologic features of the gypsum region and the character and extent of the gypsum beds. Discusses their origin and geologic age. Presents a geologic map of the gypsum region.

255 — Economic geology of Lee County [Iowa].


Describes the physiography of the county and the character and distribution of the subdivisions of the Carboniferous formation. Gives sections exposed at various localities and mentions fossils found. Describes the occurrence of coal, building stone, clay, cement, lime, and artesian and mineral waters.

Bull. 146 — 4
256 Keyes (Charles Rollin). Economic geology of Des Moines County [Iowa].
Describes the topographic character of the region and the distribution, lithologic character, and structure of the Carboniferous and Pleistocene formations. Gives sections exposed at different places and mentions fossils found. Describes the occurrence of building stone, clay, coal, and lime.

257 Paleontology of Missouri, Part I.
Mo. Geol. Surv., vol. iv, 1894, pp. 271, pls. i-xxxii, figs. 1-9, with geologic map of the State.
Describes the lithologic character, distribution, and structure of the Archean, Algonkian, Silurian, Devonian, and Carboniferous formations in Missouri, and includes descriptions of protozoans, sponges, corals, echinoderms, and crustaceans, and a stratigraphic catalogue of Missouri fossils.

258 Paleontology of Missouri, Part II.
Mo. Geol. Surv., vol. v, 1894, pp. 266, pls. xxxiii-liv, figs. 10-11.
Describes the specific characters of polyzoans, brachiopods, lamellibranchs, gastropods, cephalopods, and vertebrates occurring in Missouri, and includes a synonymic index to the fossils of Missouri.

259 Secular decay of granitic rocks.
Describes the disintegration of granitic rocks of Maryland and Missouri, and discusses the general process of secular decay of similar rocks.

260 Synopsis of American Paleozoic echinoids.
Remarks on the general characters and distribution of echinoids, and describes and figures a number of species.

261 Opinions concerning the age of the Sioux quartzite.
Reviews previous opinions as to the age of this formation, and mentions finding impressions resembling certain lamellibranchs.

262 The Cambro-Silurian question in Missouri and Arkansas.
Jour. of Geol., vol. iii, pp. 519-526.
Reviews previous papers concerning the age of the sedimentary rocks of the Ozark series in Missouri and Arkansas, and discusses the evidences of the stratigraphic succession and age of the beds which make up this series.

263 Acidic eruptions of northeastern Maryland.
Describes the granitic rocks of northeastern Maryland, discusses the evidences of continual changing in the physical condition of rocks, and remarks on the economic value of the Port Deposit granite.

264 A hypsometric map of Missouri.
Mentions the different sources from which data have been obtained concerning the elevation of different localities in the State, and presents a sketch map showing the location of lines of precise leveling and of railway lines whose levels are used for primary control.
265 Keyes (Charles Rollin). Superior Mississippian in western Missouri and Arkansas.
   Am. Geol., vol. xvi, pp. 86-91.
   Describes the distribution of the Mississippian series in the Mississippi Valley, and gives lists of fossils collected at different localities, which show that both the upper and lower portions of this series are represented in southwest Missouri.

266 — Stratigraphy of the Kansas coal measures.
   Reviews the recently published opinions concerning the Kansas coal measures, describes the deposition of these beds in the western interior basin, and discusses the relations of the coal measure formations of Iowa, Missouri, and Kansas.

267 — Granitic rocks of Missouri.
   Describes briefly the geographic distribution of granite in Missouri, and gives a classification of granitic rocks.

   Jour. of Geol., vol. iii, pp. 512-518.
   Describes the methods employed, the general features of Baird Glacier, and the results that can be obtained in studying the motions of glaciers by this method.

269 Knight (Wilbur C.). Coals and coal measures of Wyoming.
   Gives notes on the occurrence of coal in the Cretaceous strata of Wyoming in a paper, by E.W. Parker, on the "Production of coal in 1894."

   Gives a historical review of papers on the fossil flora of Alaska, a systematic enumeration of species, with descriptions of a few new species and of others previously described, and a table showing the geologic and geographic distribution of the fossil flora of Alaska, with an explanation and discussion of the table and the age of the plant-bearing beds.

   Jour. of Geol., vol. iii, pp. 527-532.
   Gives a list of the inter-Glacial woods, with brief megascopic descriptions.

272 — Report upon a small collection of fossil plants from Black Hills, near Belvidere, Kansas, collected by Prof. R. T. Hill in August, 1894.
   Includes brief notes on the species collected.

   Gives a brief report on the material and a list of the species determined.
Gives a list of the species determined and states briefly their relation to the flora of the so-called eo-lignitic beds.

275 Description of a new problematical plant from the Lower Cretaceous of Arkansas.
Describes and figures Paleohillia arkansana n. gen. et sp.

276 Kümmel (Henry B.). Some meandering rivers of Wisconsin.
Describes the geologic and physiographic features of Lafayette and Grant counties and their effect on the drainage systems of the region.

Jour. of Geol., vol. iii, pp. 364-368.

278 Salisbury (R. D.) and Lake Passaic—an extinct glacial lake.
Jour. of Geol., vol. iii, pp. 533-560.
See Salisbury (R. D.) and Kümmel (H. B.), No. 414.

279 Kunz (George Frederick). Precious stones.
Notes on the occurrence of diamonds in Wisconsin and California, rubies in North Carolina, sapphires in Montana, emeralds in the Carolinas, beryl in Maine, quartz gems in Pennsylvania, North Carolina, California, Wyoming, and Arizona, and utahlite, opal, and hyalite from Utah.

L

280 Lakes (A.). Fossilized big trees, California.
Describes the occurrence of fossil trees in Cretaceous and Tertiary strata of California.

281 Lane (Alfred C.). A connection between the chemical and optical properties of amphiboles.
Gives brief statement of the law which seems to apply to all hornblendes.

282 Crystallized slags from copper smelting.
Describes crystals of melilite occurring in these slags.

283 The bowels of the earth.
Comprises a discussion of the phenomena of volcanoes and earthquakes and of the condition of the earth's interior.

284 Laur (Frank). The bauxites: A study of a new mineralogical family.
Discusses the mineralogic and chemical characters of bauxite.
Lawson (Andrew C.). Sketch of the geology of the San Francisco peninsula [California].
Describes the petrographic character and geologic relations of the Montara granite, the distribution and character of the Franciscan series, of Mesozoic age, the occurrence of serpentine, and the petrographic character and distribution of the Pliocene and Pleistocene formations. Discusses the dynamic phenomena of the region.

On malignite, a family of basic plutonic orthoclase rocks rich in alkalies and lime, intrusive in the Coutchiching schists of Poohbah Lake [Ontario].
Univ. of Cal., Dept. of Geol., Bull., vol. i, pp. 337-362.
Describes the field relations of the rocks occurring in the Province of Ontario and their petrographic characteristics.

A contribution to the geology of the Coast ranges.
Am. Geol., vol. xv, pp. 342-356.
The region described is mainly that of the San Francisco peninsula. Describes the relations and succession of the granitic, sedimentary and volcanic series. Reviews the paleontologic evidences as to the age of the sedimentary rocks and describes the geologic structure of the region, and the post-Pliocene diastrophism.

Le Conte (Joseph). Critical periods in the history of the earth.
Univ. of Cal., Dept. of Geol., Bull., vol. i, pp. 313-336.
Describes the character of the Glacial, post-Cretaceous, post-Paleozoic and pre-Cambrian revolutions and the general laws of the evolution of the organic kingdom and the suddenness of changes and rarity of transitional forms.

[The genesis of ore deposits.]
Discusses paper by F. Posepny on the same subject.

Describes the occurrence and mode of deposition of these deposits and reviews the various theories as to their origin.

Lansing lead mines [Iowa].
Describes the occurrence of lead ore in the Oneota limestone.

Lesley (J. P.), D'Invilliers (E. V.), and Smith (A. D. W.). [Carboniferous formation, Pennsylvania.]
Describes the characters and distribution of the Carboniferous formation in Pennsylvania, giving vertical sections of many localities and coal mines, and names and figures many fossils.

Lesquereux (Leo). Cretaceous fossil plants from Minnesota.
Gives a sketch of the geologic range of plant remains, and describes the plant remains of the Cretaceous of Minnesota.
294 **Leverett** (Frank). On the correlation of New York moraines with raised beaches of Lake Erie.  
Presents a map of western New York showing the distribution of the moraines. Describes the Sleridan and Crittenden beaches and their probable correlative moraines in New York, and the character of the country inside (northeast of) the Lockport moraine.

295 — Pre-Glacial valleys of the Mississippi and tributaries.  
*Jour. of Geol., vol. iii, pp. 740-763.*  
Describes the courses of the main pre-Glacial drainage lines of the northern portion of the Mississippi basin, compares the elevation and slope of the pre-Glacial valley floors, and discusses the age and development of the pre-Glacial valleys.

296 **Lindgren** (Waldemar). Characteristic features of California gold-quartz veins.  
Describes the geographic distribution, geologic relations, and age of the gold-quartz veins in California. Discusses the structural relations of the veins and describes the association of minerals, the distribution of the gold and the alteration of the country rock. Includes a discussion of the origin of gold and a summary of conclusions. Accompanied by a map of California showing the location of the gold-quartz veins.

297 — **Turner** (H. W.). Marysville folio, California.  
Describes the topography of the region, the characters of the Pleistocene deposits and of the igneous rocks of Marysville buttes and the occurrence of gold-bearing gravels, coal, and natural gas. Includes topographic, colored areal geologic, economic geologic, and structure section maps.

298 — **Smartsville folio, California.**  
Gives a general description of the gold belt of California and a generalized columnar section of the formations of the region. Describes its topographic features, the character and distribution of the Carboniferous rocks and of the igneous rocks, including porphyrite, diabase, granodiorite, gabbrodiiorite, and amphibolite, and discusses the age of the igneous rocks. Describes the Neocene and Pleistocene formations, the associated flows of rhyolite and andesite, and the occurrence of auriferous gravels, gold quartz veins, copper, quicksilver, iron, building stone, and soils. Includes topographic, colored areal geologic, economic geologic, and structure section maps.

299 **Lonsdale** (Elston Holmes). Geology of Montgomery County [Iowa].  
Describes the physiography of the county and the distribution, stratigraphy, and lithology of the Carboniferous, Cretaceous, and Pleistocene formations. Gives sections of typical localities, and describes the occurrence of building stone, clay, coal, road materials, soils, and water supply.
300 **Lonsdale** (Elston Holmes). Cement materials in Iowa.


Contains brief remarks on certain deposits in Iowa.

301 — Upper Carboniferous of southwestern Iowa.


Reviews previous descriptions of these beds and describes their character and thickness.

302 **Luquer** (L. McL.) and **Volckening** (G. J.). On three new analyses of sodalite from three new localities [Ontario].


Describes the occurrence and chemical composition of sodalite from Ontario, Canada, Ural Mountains, Asia, and the Congo State, Africa.


Describes the occurrence, distribution, and structure of the formation in eastern Pennsylvania and discusses its occurrence in other portions of the Middle and Southern Atlantic States, and in New England.

304 — The Yardley fault [Pennsylvania].


Refers to a previous description of the fault by Prof. H. Carvill Lewis. Describes the phenomena connected with the fault and discusses the evidence as to the extent and direction of the downthrow.

305 — The Chalfont fault rock, so called.


Quotes from a previous description of the fault phenomena at Chalfont, Bucks County, Pa., by Prof. H. Carvill Lewis. Describes the dips and cleavage planes of the strata as shown in two plates.

306 **McCalley** (Heury). Alabama barite or heavy spar.


Describes its occurrence in Silurian rocks of Alabama, and the production in the various mines of the United States.

307 **McGee** (W J). The extension of uniformitarianism to deformation.


Describes the movements of the earth's crust and the evidences by which they are detected, the methods of acquiring this knowledge, and the progress of knowledge of the earth's crust. Discusses the origin of these movements.

308 — A miniature extinct volcano.


Gives a brief description of a soda lake in central Nevada and its Pleistocene history.

309 **McKellar** (Peter). The silver mines of Thunder Bay [Ontario].


Describes the occurrence of silver at Thunder Bay and discusses the origin of the deposits.
56 BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 146.]

310 Marbut (C. F.). The geographic development of Crowleys Ridge [Arkansas and Missouri].
Describes the geographic extent of the ridge and the results of stream erosion, and discusses the origin of the ridge.

Describes the occurrence of species of Baptopodon in Utah, Oregon, and Wyoming.

312 — On the affinities and classification of the dinosaurian reptiles.
Abstract of paper read before the International Congress of Zoologists, 1895. Discusses the affinities and the classification of Dinosauria, adopted by the author.

313 — Restoration of some European dinosaurs, with suggestions as to their place among the Reptilia.
Gives a brief comparison of some European and North American dinosaurs.

314 Marsters (Vernon F.). Camptonite dikes near Danbyborough, Vt.
Describes the characters of the dike rock and the manner in which it differs from the type rock at Campton Falls, N. H. Gives a list of the localities where camptonite dikes are known to occur.

315 — Camptonites and other intrusives of Lake Memphremagog [Quebec].
Am. Geol., vol. xvi, pp. 25-39, with map.
Gives a brief description of the geologic features of the vicinity of Lake Memphremagog. Describes the granite, lamprophyre, monchiquite, and fourchite dikes, the microscopic characters of the dike rocks, and gives a summary of the literature of the occurrence of these dikes.

316 Matthew (George F.). On the organic remains of the Little River group, No. II.
Quotes the author's description of the post-Cambrian beds of the region from a previous paper and describes the lithologic character and succession of the beds of this group. Discusses a new species of insect, a new scorpion, and a new land snail from these beds.

317 — On the organic remains of the Little River group, No. III.
Prepares a table of the genera of the pre-Carboniferous land flora of northeastern North America, showing their geologic distribution, and discusses their bearing on the age of the Little River beds. Gives a sketch of the literature of fossil myriapods and describes five new species from the Little River group.

318 — Early Protozoa.
Discusses the occurrence of early Protozoa in pre-Cambrian rocks, and reviews a paper by L. Cayeux on the Protozoa of the pre-Cambrian of Brittany.
319 Matthew (George F.). The Protolenus fauna.
Describes the relations of the different faunas of the Cambrian rocks of New Brunswick and Newfoundland, and the specific characters of the Protolenus fauna, including a number of new species.

320 — Two new Cambrian graptolites with notes on other species of Graptolitidae of that age.
Describes several species of graptolites occurring in the Cambrian rocks near St. John, New Brunswick.

Describes the physiography of this region in south central New Brunswick.

322 — Report on the summer camp at Lepreau basin [New Brunswick].
Describes briefly the geologic structure of this vicinity in southern New Brunswick, and gives a summary of its geologic history.

323 — Report on geology.
Gives a brief statement regarding the classification of brachiopods and of the occurrence of primitive types in the St. John group, and describes and figures Trematobolus insignis.

324 Matthew (W. D.). The effusive and dike rocks near St. John, N. B.
Presents a bibliography of the literature, describes the distribution of the pre-Cambrian volcanics along the eastern coast of North America, and reviews the classification of pre-Cambrian in New Brunswick. Describes the petrographic characters of quartz-porphyry, felsite-porphyry, diabase, soda-granite, diorite-porphyrite, and augite-porphyrite.

325 Monazite and orthoclase from South Lynne, Connecticut.
School of Mines Quart., vol. xvi, pp. 231-233.
Describes and figures the crystallographic characters of the minerals named.

326 — The volcanic rocks of the maritime provinces of Canada.
Gives a brief description of the geologic history of New Brunswick and of the character and distribution of the volcanic rocks of Nova Scotia and New Brunswick.

327 Matthews (Edward B.). The granites of Pikes Peak, Colorado.
Describes several types of granite from the Pikes Peak region and discusses the genetic sequence.
328 **Mead** (Daniel W.). Notes on the hydro-geology of Illinois in relation to its water supplies.
Describes the geologic features of the State and its drainage systems, and gives sections showing the character of the strata and tables of physical data of artesian wells. Contains geologic maps of Illinois and of northern Illinois and southern Wisconsin and a cross section.

329 — The hydro-geology of the Upper Mississippi Valley and some of the adjoining territory.
Gives tables showing the amount of rainfall and rate of evaporation in various parts of the region and a general summary of the geology, with vertical sections displayed in certain wells. Discusses the glacial deposits and presents a number of tables giving physical data of artesian and deep wells in the Upper Mississippi Valley. The paper contains six maps.

330 — The geology of Wisconsin water supplies.
Paper read before the convention of American Waterworks Association at Milwaukee, Wis., September 5-9, 1893. Author's edition, Rockford, Ill.
Describes the general geologic features of Wisconsin in relation to the water supply and gives data regarding the artesian and deep wells. The paper contains a geologic map of the State.

331 — Geological map and table of economic resources of Illinois.
Author's edition, Rockford, Ill.
Presents a geologic map of Illinois and tables showing the analysis of Illinois limestones and clays and the economic resources with geologic strata and geographic locality where found.

332 **Meadows** (Thomas C.) and **Brown** (Lytle). The phosphates of Tennessee.
Gives a historical sketch of phosphate mining and a map of the region. Describes the occurrence of phosphatic material at various localities and the general geology of the district. Discusses the origin of the material.

Describes the occurrence of fossil vertebrates and plants in this cave.

334 **Merriam** (John C.). On some reptilian remains from the Triassic of northern California.
The remains consist of vertebrae and fragments of ribs and were obtained from the black bituminous limestones of the Trias in Shasta County, Cal. Their systematic position is within the old order Eualiosauria. Proposes the new generic and specific name Shastasaurus pacificus for one of the skeletons.
336 **Merriam** (John C.). Sigmogomphius lecontei, a new castoroid rodent from the Pliocene, near Berkeley, Cal.
Univ. of Cal., Dept. of Geol., Bull., vol. i, pp. 363-370.
Gives a history of Castoridae, a description of the fossil remains collected, and a comparison with other castoroid genera, and describes their geologic and geographic distribution.

336 **Merrill** (Frederick J. H.). The geology of natural scenery.
Describes geologic phenomena in New York and in portions of Europe.

337 —— The geology of Moriah and Westport townships, Essex County, N. Y.
See Kemp (J. F.), No. 245.

338 —— Clay industries of New York.
See Ries (H.), No. 398.

339 **Merrill** (George P.). The onyx marbles: their origin, composition, and uses, both ancient and modern.
Discusses its origin, mode of occurrence, and chemical and physical properties, and describes its occurrence in Arizona, California, eastern Appalachian region, Colorado, Utah, New Mexico, Mexico, and in foreign countries.

340 —— On the formation of stalactites and gyspum incrustations in caves.
Describes the formation of stalactites and incrustations in Wyandotte Cave, Indiana, Luray Caves, Virginia, and the Mammoth Cave, Kentucky.

341 —— The formation of sandstone concretions.
Describes the formation of nodular masses of siliceous sand and iron disulphide in the Potomac division of the Cretaceous in the District of Columbia.

342 —— Notes on some eruptive rocks from Gallatin, Jefferson, and Madison counties, Montana.
Describes the petrographic characters of the following rock types in this region: Enstatite andesite, basalt (?) (with chemical analysis), augite andesite, hornblende andesite, lamprophyry, porphyrite (?) (with chemical analysis), hypersthene andesite (with chemical analysis), diorite rhyolite, andesite, hornblende picrite (with chemical analysis), saxonite (harzburgite) (with chemical analysis), pyroxenite (with chemical analysis), diabase, liparite, pyroxenite (websterite) (with chemical analysis), diorite porphyrite, quartzose hornblende porphyrite (with chemical analysis), and lamprophyres (with chemical analyses).

343 —— Disintegration of the granitic rocks of the District of Columbia.
Describes the character of the rock and the extent of the disintegration of a particular locality and gives chemical analyses of the fresh rock, of that partially decomposed, and of the soil. Gives analyses of material separated by solvents and also mechanically separated. Discusses the conditions affecting the results and compares them with analyses of material from other localities. Discusses the evidence of the time limit and causes of the disintegration.
344 Merritt (William Hamilton). [Nickel deposits at Sudbury, Ontario.]
Discussion of paper by S. F. Emmons on the "Geological distribution of the useful metals in the United States."

345 Miller (Arthur M.). High level gravel and loam deposits of Kentucky rivers.
Am. Geol., vol. xvi, pp. 281-287.
Discusses the evidences of a former flooded condition of some of the Kentucky rivers and the possibility of the terminal moraine having blocked the mouths of the Kentucky and Licking rivers. Presents a map of northeastern Kentucky.

346 Miller (S. A.) and Gurley (William F. E.). New and interesting species of Paleozoic fossils.
Describes new species of fossils from the Carboniferous of Missouri, the Devonian of Indiana, and the Silurian of Tennessee and Indiana.

Science, new ser., vol. i, pp. 656-657 (correspondence).
Describes deposits of volcanic dust occurring in the Oquirrh and Wasatch mountains, Utah, and in the Green River region of northwestern Colorado.

348 Moses (Alfred J.). Contributions from the mineralogical department of Columbia College.
School of Mines Quart., vol. xvi, pp. 226-231.
Describes the crystallographic characters of zincite, atacamite from Arizona, enargite from Montana, and hollow pseudomorphs of quartz after an unknown mineral from New Jersey.

Describes the character of the erosion of central Michigan and discusses the evidences which indicate that this depression is an unfilled portion of a much deeper valley, eroded in pre-Glacial time. Discusses the theory of a submergence of the Great Lakes during the Glacial period.

350 Nason (Frank L.). The franklinite deposits of Mine Hill, Sussex County, New Jersey.
Describes recent operations with the diamond drill and the evidence obtained as to the position and extent of the ore body.

351 —— The geological structure of the Ringwood iron mines, New Jersey.
Describes the position of the ore bodies and discusses their geologic structure.
Describes the occurrence of gold placers on the western edge of the Mojave desert, California.

353 Newell (Frederick Haynes). The public lands and their water supply.
Describes the character of the public lands of the Western States and their water supply.

Reviews the history and nomenclature of this mineral, describes its crystallographic and chemical characters, and gives a table showing its geographic and geologic occurrence. Includes a bibliography.

Mentions the localities where these outliers are known to occur and the fossils that have been found in them.

356 Thickness of the Paleozoic strata of northeastern Iowa.
Gives the thickness of the different Paleozoic formations at various localities in Iowa and the vertical sections displayed by several deep well borings.

357 Geology of Linn County [Iowa].
Describes the topography and drainage of the area and the distribution and lithologic character of the Upper Silurian, Devonian, and Pleistocene beds, and an outlier of Carboniferous strata. Gives vertical sections at various localities and describes the occurrence of building stones, clay, and lime.

358 Occurrence of Megalomus canadensis Hall in the Le Claire beds at Port Byron, Illinois.
Contains brief notes on the occurrence of the fossil at this locality.

359 Geological section of the Y. M. C. A. artesian well at Cedar Rapids, Iowa.
Gives the section of the well to a depth of 1,462 feet and a table showing the thicknesses of the formations penetrated.

In discussion of paper by J. F. Kemp on the same subject.
  Gives a description of the occurrence of the fossils and the character of the formations in the Uinta Basin, in northeastern Utah, by Mr. O. A. Petersou. In a table shows the succession of species in the three faunal levels and describes the fossils collected, including several new species.

362 — and Earle (Charles). Fossil mammals of the Puerco beds.
  The fossils described were found in the San Juan region of New Mexico. Quotes from Dr. Wortman's field notes describing their occurrence. Gives in tabular form a synopsis and vertical distribution of the Puerco fauna, and describes the characters of the fossils collected, including a number of new species.

363 — and Wortman (J. L.). Perissodactyls of the Lower Miocene White River beds [South Dakota].
  Gives a list of the species described and the lithologic character and thickness of the beds in which they were found. Describes the fossils collected, including a number of new species.

364 Packard (E. L.). Note on a blue mineral, supposed to be ultramarine, from Silver City, New Mexico.
  Gives a brief description of its occurrence and a chemical analysis of the material.

365 — On an occurrence of copper in western Idaho.
  Describes the occurrence of copper in the mountains separating Oregon from Idaho and the petrographic and chemical characters of the diorite with which it is associated.

  Describes the crystallographic characters of the material examined.

367 Penrose (E. A. F., jr.). Geology and mining industries of the Cripple Creek district, Colorado, Part II. Mining geology of the Cripple Creek district, Colorado.
  U. S. Geol. Surv., 16th Ann. Rept., part ii, pp. 111-209, pls. iii-xiv, figs. 2-37, with supplemental map of the Cripple Creek district.
  Gives a historical account of mining at Cripple Creek. Describes the mineralogic character and superficial alteration of the gold ores. Discusses the mode of occurrence and deposition of the ores. Chapters V and VI contain detailed descriptions of the mines. Contains a discussion of the chemical characters of calaverite by W. F. Hillebrand and of its crystallographic characters by S. L. Penfield.


372 Pirsson (Louis V.). Complementary rock and radial dikes. Am. Jour. Sci., 3d ser., vol. 1, pp. 116–121. Describes the smaller bodies, usually dikes and sheets, which frequently accompany large intrusions of massive igneous rocks, which are in part more basic and in part more acid than the main bodies. Such rocks are known as complementary rocks. Discusses the use of the term lamprophyre for the basic type, and suggests the term oxyphyre for the acid type. Considers that radial dikes around an eruptive center are usually of later formation, and are most typical in areas of undisturbed, homogeneous, and sedimentary strata; further, that normally oxyphyres most commonly cut the central stock and lamprophyres the outer zone of sedimentaries.


Gives a general vertical section of the Cambrian rocks of eastern Nova Scotia and discusses their geologic age. Describes the folding, mineralization, and denudation of these rocks. Remarks on the classification of the gold mines, and discusses the probabilities of deep mining.

379 Prosser (Charles S.).—The classification of the Upper Paleozoic rocks of central Kansas.
Jour. of Geol., vol. iii, pp. 682-705 and 764-800.
Describes the topographic features of the region and the lithologic character and fauna of the Perminian and Permo-Carboniferous rocks, and reviews previous descriptions of the geology of Kansas. Presents a table showing the stratigraphic position and character of the formations comprising the Upper Paleozoic of central Kansas.

380 Kansas River section of the Permo-Carboniferous and Permian rocks of Kansas.
Reviews the work of Meek and Hayden and Professor Swallow in this region. Describes the sections at Manhattan, the Mill Creek section, and that of the upper Kansas River, giving lists of fossils collected and comparing the faunas of some of the beds. Presents a “chart giving tabulated sections of the rocks exposed along the Kansas River southwest of Manhattan, as described by Meek and Hayden, Swallow and Hay.”

Jour. of Geol., vol. iii, pp. 353-357.

382 Quille (Dan de).—The gold belts of Nevada.
Describes the occurrence of gold at Virginia City and other localities in Nevada.

383 Millions in gold beneath the lava flows.
Discusses the occurrence of gold beneath the lava flows of Idaho and California.

384 Rand (Theodore D.).—Trap dikes in Chester County, Pennsylvania.
Gives brief notes on the occurrence of trap dikes in this county.

385 Ransome (F. Leslie).—On lawsonite, a new rock-forming mineral from the Tiburon peninsula, Marin Co., Cal.
Univ. of Cal., Dept. of Geol., Bull., vol. i, No. 10, pp. 301-312, pl. 17.
Describes the optical, crystallographic, chemical, and physical characters of lawsonite, with notes on the associated minerals.

386 Rauff (Hermann).—Paleospongiology.
Paleontographica, Band xli, pp. 223-272, pls. xx-xxvi, figs. 76-124.
Describes new species of fossil sponges from the Niagara rocks of Tennessee and one from the Trenton of Manitoba.

Neues Jahr. für Min., etc., 1895, Band i, pp. 1-15.

Describes the characters of the fossil, and reviews the descriptions of Messrs. Hill and Cragin.

388 **Raymond** (R. W.). [The torsional theory of joints.]


In discussion of paper by G. F. Becker on the same subject.

389 [Pyrhotite deposits at Anthonys Nose, New York.]


In discussion of paper by J. F. Kemp on "The nickel mine at Lancaster Gap, Pennsylvania, and the pyrrhotite deposits at Anthonys Nose on the Hudson."

390 [The classification of ore deposits.]


391 [The genesis of ore deposits.]


In discussion of paper by F. Posepny on the same subject.

392 **Raymond** (R. W.). The superficial alteration of ore deposits.


Reviews paper by R. A. F. Penrose, jr., on the same subject.

393 **Reid** (Harry Fielding). The variations of glaciers.

Jour. of Geol., vol. iii, pp. 269-288.


Discusses the causes of variations in glaciers, and describes the observations that should be made in studying glacial phenomena.

394 **Rhoads** (Samuel N.). Distribution of the American bison in Pennsylvania, with remarks on a new fossil species.


Remarks on the former occurrence of the American bison in Pennsylvania, and describes a new species, Bison appalachicolus.

395 **Rickard** (T. A.). [The genesis of ore deposits.]


In discussion of paper by F. Posepny on the same subject, presents the author's classification of ore bodies, and discusses phenomena observed in mines in Colorado and Arizona.

396 Porphyry.


Discusses the characters of porphyries and their occurrence in different mining regions.

397 Variations in the milling of gold ores, xii. The Black Hills, South Dakota.


Describes briefly some of the ore bodies of the Black Hills.

Bull. 146—5
Describes the occurrence of clay deposits in Quaternary, Tertiary, and Cretaceous strata of the State. Gives a list and figures of diatoms found in Cretaceous beds, and includes an account of the clay industries and a map of the State, showing the location of clay deposits and manufactories.

399 **Ries** (Heinrich). On a granite-diorite near Harrison, Westchester County, N. Y.
Describes the petrographic characters of a granite-diorite, of a gneissic structure, occurring at the locality named.

400 **Robertson** (James D.). The Missouri lead and zinc deposits.
Describes the differences between the deposits of the southwestern portion of the State and those of the central and southeastern, the characters of the country rock, and the forms and mode of deposition of the ore bodies. Describes the lead and zinc compounds and accessory minerals. Reviews some of the theories advanced to account for the origin of these deposits, and discusses the evidence in support of the author's hypothesis.

401 — [Lead and zinc deposits in Missouri.]
See Winlow (A.), No. 564.

402 **Rolker** (Charles M.). The production of tin in various parts of the world.
Includes statistics of production in various countries and notes on the occurrence of tin in Maine, Virginia, North Carolina, Alabama, Texas, South Dakota, and California.

403 **Rowley** (R. R.). Description of a new genus and five new species of fossils from the Devonian and sub-Carboniferous rocks of Missouri.
Am. Geol., vol. xvi, pp. 217-223.
Describes Aristocrinus n. gen. and five new species.

404 **Ruedmann** (R.). Synopsis of the mode of growth and development of the graptolitic genus Diplograptus.
Describes and figures the results of observations made upon a large collection of specimens of Diplograptus found near Dolgeville, N. Y.

405 **Rundall** (W. H.). Quicksilver ores at Guadalcazar, Mexico.
Describes the occurrence of quicksilver at this vicinity.

Jour. of Geol., vol. iii, pp. 358-364.

407 — The influence of débris on the flow of glaciers.
Jour. of Geol., vol. iii, pp. 823-832.
Discusses the rate of flow of glaciers as affected by glacial erosion and subglacial deposition, the unconsolidated deposits beneath glaciers, terminal moraines, and the variations of glaciers.
N. J. Geol. Surv., Rept. for 1894, pp. 1-150, pls. i-iv.
Describes the distribution and character of the drift deposits of the northern portion of New Jersey, the distribution and direction of the glacial strife, the changes of drainage of lakes and streams, and the lithologic character and succession of certain deposits of Tertiary age. Includes geologic sections and map showing the course of ice movement in the last Glacial epoch.

409 — Surface formations of southern New Jersey.
Describes the distribution, composition, thickness, and age of the Beacon Hill, Pensauken, and Jamesburg formations, which constitute "the post-Cretaceous surface materials south of the Triassic belt of New Jersey."

410 — Studies for students. Agencies which transport materials on the earth's surface.
Jour. of Geol., vol. iii, pp. 70-97.
Discusses the evidences of the action of the wind, water, water and ice cooperating, and ice, in transporting materials on the earth's surface.

411 — [Review of the "Report on the geology of the Coastal Plain of Alabama," by E. A. Smith].
Jour. of Geol., vol. iii, pp. 101-108.
In this review the author discusses the classification and relation of the Lafayette beds.

412 — Pre-Glacial gravels on the quartzite range near Baraboo, Wis.
Jour. of Geol., vol. iii, pp. 655-667.
Describes the character of these gravel deposits and names the fossils found in the pebbles. Discusses the evidence as to the age of these gravels and their relation to the high-level gravels of adjacent States.

413 — The Greenland expedition of 1895.
Jour. of Geol., vol. iii, pp. 875-902.
Describes the coastal topography of Greenland in about latitude 64° 30', and to the north, and the general features of the glacial phenomena. Discusses the evidences of past glaciations drawn from the nature of the rock surfaces and the evidence of recent changes of level.

414 — and Kümml (H. B.). Lake Passaic—an extinct glacial lake [New Jersey].
Jour. of Geol., vol. iii, pp. 533-560.
Describes the position and character of the lake basin, the existing shore features, its lacustrine deposits, and the different outlets. Discusses the evidences of the various phases of its history.

415 Sardeson (F. W.), Hall (C. W.) and. The Magnesian series of the Northwestern States.
See Hall (C. W.) and Sardeson (F. W.); No. 183.
416 **Schmitz** (E. J.). The structure of the Richmond coal basin [Virginia].


Describes the geologic structure of the region, illustrated by cross sections.

417 **Schuchert** (Charles). Dry dredging in the Mississippian Sea.


Gives an account of collecting fossils from the Devonian rocks of Ontario and Michigan.

418 — **American fossil Brachiopoda.**


Describes a work in preparation by the author entitled "A synopsis of American fossil Brachiopoda, including bibliography and synonymy," and gives a summary of the important results.

419 — **Winchell** (N. H.) and. Sponges, graptolites, and corals from the Lower Silurian of Minnesota.

*Minn. Geol. and Nat. Hist. Surv., Final Rept., vol. iii, part i, pp. 55-95, pls. F and G.*

See Winchell (N. H.) and Schuchert (Charles), No. 561.

420 — **The Lower Silurian Brachiopoda of Minnesota.**


See Winchell (N. H.) and Schuchert (Charles), No. 562.

421 **Scott** (W. B.). The osteology and relations of Protoceras.

*Jour. of Morph., vol. xi, pp. 303-374, pls. xx-xxii.*

Describes the dentition, brain, vertebral column, and limbs of Protoceras, discusses its systematic position, and describes and figures a restoration of Protoceras celer.

422 — **A restoration of Hyænodon.**

*Geol. Mag., dec. iv, vol. ii, pp. 441-443, pl. xiia.*

Describes briefly the characters of Hyænodon cruentus Leidy from the White River beds of South Dakota.

423 — **On the Tertiary lacustrine formations of North America.**


Gives a brief description of the Tertiary lacustrine beds occurring in the Great Plains and Rocky Mountain region.

424 **Scudder** (Samuel H.). The Tertiary Hemiptera of British Columbia.

*Canada Geol. Surv., Cont. to Canadian Paleontology, vol. ii, part i, pp. 5-26, pl. i.*

Describes fossil insects from the Tertiary strata of British Columbia, including several new genera and species.

425 — **The Coleoptera hitherto found fossil in Canada.**

*Canada Geol. Surv., Cont. to Canadian Paleontology, vol. ii, part i, pp. 27-56, pls. 2-3.*

Describes the characters of Coleoptera found in Pleistocene, Tertiary and Cretaceous strata of various parts of Canada.
426 Scudder (Samuel H.). Notes upon myriapods and arachnids found in sigillarian stumps in the Nova Scotia coal field.
Gives descriptions and figures of several species, including two new ones.

427 Revision of the American fossil cockroaches, with description of new forms.
Gives faunal lists of American cockroaches and tables of distribution, and discusses the characteristics of Mylacridae. Describes and figures many species, including new species.

Gives a summary of the reports of the geologists on the work done in British America in 1892.

429 Summary report of the operations of the Geological Survey for the year 1893.
Gives a summary of the reports of the geologists of the work done in 1893.

Gives a historical outline of American roads, describes methods of using stone in road building, the relative value of road stones, their distribution, the action of rain, frost, and wind, the effect of geologic structure on grades of roads, and the sources of supply of road stone in New England, Appalachian region, Atlantic Coastal Plain, Mississippi Valley, Great Lakes region, and Cordilleran region.

431 The geology of the road-building stones of Massachusetts, with some consideration of similar materials from other parts of the United States.
Gives an account of the methods of collecting and testing materials employed. Describes the character of road-building materials of glacial origin, in bedded rocks, and dike and vein stones, in Massachusetts. Contains a discussion of topographic conditions affecting road building, a description of the brickmaking clays and road-making gravels, and statistics concerning the resistance to wear of road-building stones.

432 Origin, distribution, and commercial value of peat deposits.
Describes the formation of peat and the distribution of peat bogs in the United States.

433 [Dislocations of the Cretaceous and Tertiary rocks of Mar­thas Vineyard, Mass.].
In discussion of paper by Arthur Hollick on “Dislocations in certain portions of the Atlantic Coastal Plain strata and their probable causes,” discusses the character of the folds and of the topography which existed when the region was invaded by the ice sheet.
434 Shaler (Nathaniel Southgate). Evidences as to the change of sea level.


Gives a synopsis of the author’s previous views of the conditions and forces affecting sea level. Describes the agencies deforming shore lines, and discusses the value of criteria indicating higher and lower seashores. Describes the changes in altitudes of portions of North American coasts and also those of other countries.


Describes the occurrence of native sulphur in the Upper Heiderberg limestone of Monroe County, Mich.

436 Skewes (Edward). Cripple Creek, Colorado.

Eng. and Mg. Jour., vol. lix, pp. 103-104 and 151-152.

Describes the occurrence of gold in some of the mines of Cripple Creek, Colo.

437 — Cripple Creek phonolite dikes, Raven Hill, Colorado.


Describes the occurrence and character of the dike rock in some of the mines of Cripple Creek.

438 Smith (A. D. W.), Lesley (J. P.), D'Invilliers (E. V.) and . [Carboniferous formation, Pennsylvania.]


See Lesley (J. P.), D'Invilliers (E. V.) and Smith (A. D. W.), No. 292.

439 Smith (Eugene A.). Alabama’s resources for the manufacture of Portland cement.


Describes the occurrence of the raw materials in the Cretaceous and Tertiary limestones and clays of Alabama.

440 Smith (James Perrin). Mesozoic changes in the faunal geography of California.

Jour. of Geol., vol. iii, pp. 369-384.

Describes briefly the relations of the pre-Carboniferous and Carboniferous faunas and the post-Paleozoic revolution. Discusses the relations of the Triassic, Jurassic, and Cretaceous faunas of California, compares them with the Mesozoic faunas of Europe and other portions of western United States, and gives the author’s summary of conclusions.

441 — Studies for students. Geologic study of migration of marine invertebrates.

Jour. of Geol., vol. iii, pp. 481-495.

Reviews recent literature discussing the geographic distribution of faunas in recent and geologic time. Discusses the causes of migration, the influence of land and water barriers and climatic zones in limiting migration, and the criteria by which the occurrence of migration is established.

442 — The Carboniferous strata of Shasta County, California.

443 Smyth (C. H. jr.). On a basic rock derived from granite.
Describes the character of a basic rock derived from granite in Jefferson County, N. Y. Gives the chemical analysis of a specimen of the altered material, and discusses the evidences as to the causes which have produced the alteration.

444 — Crystalline limestones and associated rocks of the northwestern Adirondack region [New York].
Describes the extent and character of the limestones, and the areas of gneiss, igneous rocks, granite, and diorites. Gives a more detailed statement of the occurrence, character, and relations of the three varieties of gabbro associated with the limestone.

445 Smyth (Henry Lloyd). The Republic trough [Michigan].
Describes the distribution and character of the Archean and the Lower and Upper Marquette series and their contacts. Discusses the position, relations, and origin of the ore deposits.

446 Snow (E. P.). The Fourmile placer fields of Colorado and Wyoming.
Eng. and Mg. Jour., vol. ix, pp. 102-104.
Describes the occurrence of gold placers in Routt County, Colo., and Carbon County, Wyo.

447 — The Hartville iron-ore deposits in Wyoming.
Describes the character and geologic relations of the ore body.

448 — The Douglas Creek placers, Albany County, Wyoming.
Eng. and Mg. Jour., vol. ix, pp. 539-541, with map.
Describes the occurrence of this placer in the Medicine Bow range.

449 Spencer (Arthur C.). Certain minerals of Webster County, Iowa.
Describes the character and occurrence of quartz, pyrite, celestite, and gypsum.

450 Spencer (J. W.). Reconstruction of the Antillean continent.
Describes the characteristics of old valleys and the deformation of land surfaces. Describes the submarine valley and fjords of the continental and Antillean regions, and discusses the evidences of elevation and subsidence in Pliocene and Pleistocene time. Discusses the evidence of the separation of the Antillean basins from the Pacific and their connection with the Atlantic, and the biologic bearing of the physical changes of level.

451 — [On the formation of glacial terrace plains.]
In discussion of paper by C. H. Hitchcock on "High level gravels in New England."

452 — [Lake Newberry as the probable successor of Lake Warren.]
In discussion of paper by H. L. Fairchild on the same subject.
Describes the former continental elevation, the character of the lake basins, and the buried drainage systems.
Describes the deformation of the deserted beaches, the origin of the glacial lakes, and changes of their outlets.

454 — Duration of Niagara Falls.

455 — Note on Mr. Künnel's review of the "Reconstruction of the Antillean continent."
Jour. of Geol., vol. iii, pp. 497-498.
Discusses some of the evidences of recent changes in continental elevations.

456 — Preliminary notes on the late connection and separation of the Pacific Ocean and Gulf of Mexico.
Describes the author's recent observations in this region.

Introduction.—The Oquirrh Mountains, by S. F. Emmons. Chapter i is a description of the general geology of the mining district. Chapter ii describes the geology of the Silver Ledge and the nature of the silver ores and discusses their origin. Chapter iii describes the occurrence and character of the gold ores and discusses their origin.

Discusses the relation of the Catorce beds to the Lower Cretaceous beds of the Pacific Coast and the Texas region.

Gives brief notes on the species collected.

Gives a historical sketch of coal mining in New England, a brief description of the strata containing coal beds, and a list of plant remains collected from them.

Describes the occurrence of gold and the associated rocks in various parts of California.
Taylor (Frank B.). Changes of level in the region of the Great Lakes in recent geological time. [Letter to J. D. Dana.]
Reviews the evidences of the height reached by the highest old shore line of Lake Superior, the extent of glacial time as shown by the Niagara cataract, and the nature of the changes that have been produced by alternations in the altitude of the region.

Niagara and the Great Lakes.
Describes the extent of the Chippewa beach in the Lake Superior and Michigan-Huron basin, the beaches of the Gulf of Winnipeg, the extent of the Hudson-Champlain strait, and the extent of the first Lake Algonquin. Reviews descriptions of the Niagara gorge, describes the succession of the lake stages, and gives a chronologic conspectus of the post-Glacial history of the Great Lakes.

The Munuscong Islands [Michigan].
Am. Geol., vol. xv, pp. 24-33.
Presents a map showing the location of the ancient Munuscong Islands to the north of Mackinac Strait. Describes the character of the surface formations and beaches, and in a table compares the heights of the principal shore lines within the area of the map.

The second Lake Algonquin.
Am. Geol., vol. xv, pp. 100-120 and 162-179.
Describes the southern extension of the Nipissing beach along the Michigan and Huron shores and discusses the causes of the change of outlet and the deformation of the Nipissing plane. Presents a map showing the extent of Lake Algonquin and the subsequent deformation of the Nipissing plane. Describes the order of the changes and reviews Dr. Spencer's paper on the duration of Niagara gorge. Discusses the evidences of recent elevation and tilting in contiguous regions.

The Nipissing beach on the north Superior shore.
Describes the general character of the Nipissing beach and its form and extent at certain localities on the north shore of Lake Superior. This paper is based on observations published by A. C. Lawson in a paper entitled "Sketch of the coastal topography of the north side of Lake Superior with special reference to the abandoned strands of Lake Warren." Gives the author's summary and conclusions.

[On the use of the term "Eriagin"].
Am. Geol., vol. xv, pp. 394-395 (correspondence).
Refers to the author's use of the term "Eriagin" to denote a section of the Niagara gorge and proposes to substitute the name "Little Niagara" throughout for "Eriagin."

Thomas (Benjamin W.), Woodward (Anthony) and. The microscopical fauna of the Cretaceous in Minnesota, with additions from Nebraska and Illinois. (Foraminifera, Radiolaria, Coccoliths, Rhabdoliths.)
See Woodward (A.) and Thomas (B. W.), No. 567.
Tilton (J. L.). On the southwestern part of the Boston Basin [Massachusetts].
Describes the general character of the rocks, with a discussion of special parts of the boundary between the granite and basin rocks.

Geological section along Middle River, in central Iowa.
Gives a cross section of the region and the vertical section of the Carboniferous rocks at various localities. Discusses the subdivision of the Iowa Coal Measures into upper and lower divisions.

Todd (J. E.). Inequalities in the old Paleozoic sea bottom.
Am. Geol., vol. xv, p. 64 (correspondence).
Gives the depths at which crystalline rocks were struck in well borings at various localities in Iowa and Nebraska.

Volcanic ash bed near Omaha [Nebr.].
Am. Geol., vol. xv, p. 130 (correspondence).
Describes briefly an occurrence of a volcanic ash bed in the bluffs of the Missouri River near Omaha, Nebr.

Recent geological work in South Dakota.
Am. Geol., vol. xvi, p. 202 (correspondence).
Gives a brief statement of some of the recent results obtained by two parties sent into the field by the School of Mines of South Dakota.

and Bain (H. Foster). Interloessial till near Sioux City, Iowa.
Describes the outcrop of the till in the banks of the Big Sioux River. Discusses its origin.

Turner (Henry W.). The age and succession of the igneous rocks of the Sierra Nevada.
Jour. of Geol., vol. iii, pp. 385-414, with map.
Describes the topographic and general geologic features of the Sierra Nevada range and the character, age, and succession of the igneous rocks. Includes chemical analyses of some of the pre-Tertiary and Tertiary igneous rocks and a geologic map of the region.

Auriferous gravels of the Sierra Nevada.
Reviews the paleontologic evidence as to the age of the two groups into which the auriferous gravels are divided. Presents a report by F. H. Knowlton on the fossil plants collected at certain localities in California.

Further notes on the gold ores of California.
Describes the occurrence of gold in barite, gold associated with talc-schists, and the occurrence of gold-quartz veins in Tertiary rocks in California.
Describes the occurrence and chemical composition of mariposite and the occurrence of tetrahedrite in quartz veins.
   Refers to a previous article in which the occurrence of serpentine in
   gold-quartz veins is described.

479 — Volcanic dust in Texas.
   Gives a description by R. T. Hill of the locality where the material
   was found, and refers to similar volcanic material from Nebraska, Mont­
   ana, Idaho, and California.

480 — The gold belt of California.

481 — Lindgren (W.) and Marysville folio, California.
   See Lindgren (W.) and Turner (H. W.), No. 297.

482 — Smartsville folio, California.
   See Lindgren (W.) and Turner (H. W.), No. 298.

483 Udden (J. A.). Fossil frost cracks.
   Describes the occurrence of certain phenomena, considered to be frost
   cracks, in Cretaceous sandstone of the Black Hills, South Dakota.

484 Ulrich (E. O.). On the structure and systematic position of
   "Anomaloides," and a proposal to change the name to
   Anomalospongia.
   Remarks on the previous description of Anomaloides reticulatus, and
   describes the characters of the new genus and species, Anomalospongia
   reticulatus.

485 — On Lower Silurian Bryozoa of Minnesota.
   Minn. Geol. and Nat. Hist. Surv., Final Rept., vol. iii, part i, pp. 96-332,
   pls. 1-28, figs. 8-20.
   Gives the terminology of Bryozoa, and remarks on the preservation,
   methods of study, classification, and geologic distribution of Paleozoic
   Bryozoa. Describes genera and species occurring in the Lower Silurian
   of Minnesota.

486 Ulrich (E. O.), Winchell (N. H.) and. Historical sketch of inves­
   tigation of Lower Silurian in the Upper Mississippi Valley.
   See Winchell (N. H.) and Ulrich (E. O.), No. 563.

487 Upham (Warren). Late Glacial or Champlain subsidence and
   reelevation of the St. Lawrence river basin.
   Discusses the evidences of the epeirogenic movements that began and
   ended the Champlain epoch. Describes the character and distribution
   of the beaches of the Glacial lakes that occupied the St. Lawrence basin.
76 BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 146.

488 **Upham** (Warren). Epochs and stages of the Glacial period.
   States briefly the reasons for considering that Pleistocene glaciation
   was continuous, with fluctuations of the ice margin much greater in the
   interior than eastward. Presents a table showing the minor time sub-
   divisions of the Glacial and Champlain epochs.

489 — Drumlin accumulation.
   Am. Geol., vol. xv, pp. 194-195 (correspondence).
   Describes the general features of drumlins as shown by recent de-
   scriptions of the glacial phenomena of Greenland.

490 — Climatic conditions shown by North American inter-Glacial
   deposits.
   Describes the fluctuations of the borders of the ice sheet, and the
   character of the inter-Glacial deposits in Minnesota, Iowa, Illinois, Indiana,
   Ohio, New England, and portions of Canada. Mentions many of
   the fossils found in these inter-Glacial beds. Presents a map showing
   the maximum area of the ice sheet and the stages of its recession, and a
   table showing the epochs and stages of the Glacial period.

491 — Stages of recession of the North American ice sheet, shown
   by glacial lakes.
   Am. Geol., vol. xv, pp. 396-399 (correspondence).
   Gives the sequence of events of the recession of the ice sheet repre-
   sented by seven stages of waning glaciation, and discusses the evidence
   attributing the Pleistocene shore lines to lakes dammed on the north by
   the receding ice sheet.

492 — Correlations of stages of the Ice age in North America and
   Europe.
   Am. Geol., vol. xvi, pp. 100-113, pls. v-vi.
   Presents a map of the glaciated region of North America and one of
   the glaciated area of Europe. Describes the different stages into which
   the author divides the Glacial and Champlain epochs. Discusses the
   evidences of the character, formation, and accumulation of marginal
   moraines, and compares the Alaskan ice sheet with that of Greenland.

493 — Warm, temperate vegetation near glaciers.
   Am. Geol., vol. xvi, pp. 326-327 (correspondence).
   States the author's opinions as to the existence of a warm, temperate
   vegetation near the glacial ice sheet.

494 — View of the Ice age as two epochs, the Glacial and Champlain.
   Discusses the nomenclature of the epochs and stages of the Glacial
   epoch, and describes their character and extent in North America.

495 — Tertiary and early Quaternary baseleveling in Minnesota,
   Manitoba, and northwestward.
   See Bibliography and Index for 1894, No. 378.
496 **Upham** (Warren). Departure of the ice sheet from the Laurentian lakes.


Describes the phenomena attending the retreat of the ice sheet, the character of the shore lines, the height of the beaches of the western Superior glacial lake and of lakes Warren and Algonquin, and the formation of these glacial lakes. Discusses the character and progress of the uplift following the recession of the ice sheet.

497 Discrimination of glacial accumulation and invasion.


Discusses the mode of formation of ice sheets, the character of the drift and morainal phenomena, and the causes of ice accumulation and departure. Describes the phenomena attending an invasion by the advancing border of an ice sheet, and discusses the meteorologic explanation of the irregularity of glacial invasion and the criteria of ice accumulation and invasion.

498 Quaternary time divisible into three periods—the Lafayette, Glacial, and Recent.


Describes the character of the Glacial and post-Glacial phenomena, and gives an estimate of the duration of Quaternary time.

499 Minor time divisions of the Ice age.


Discusses the evidences of fluctuations of the ice sheet and gives the author's classification.

500 Late Glacial or Champlain subsidence and reelevation of the St. Lawrence River Basin.


Discusses the evidences of uplift and subsidence prior to and during the Glacial period as shown by beaches of the glacial lakes of the St. Lawrence Basin.

V.

501 **Van Hise** (Charles R.). The origin of the dells of the Wisconsin.


Discusses the evidence of the position of the dells of the Wisconsin River and tributaries as being controlled by a rectangular system of joints in the strata.

502 Summary of current pre-Cambrian North American literature.

Jour. of Geol., vol. iii, pp. 227-236 and 709-721.

Reviews a number of recent papers describing pre-Cambrian rocks of North America.


Describes the distribution, geologic relations, and lithologic characters of the rocks forming the Basement Complex, Lower Marquette series, and the Upper Marquette series, and discusses the dynamic movements which have affected these formations and their correlation with other formations. Includes a chapter on the Republic Trough, by H. L. Smyth.
504 **Vaughan** (T. Wayland). The stratigraphy of northwestern Louisiana.


Reviews the literature of the Cretaceous and Tertiary strata of the region and describes the lithologic and faunal characters of the Eocene deposits. Gives lists of fossils collected at various localities. Discusses the relations of the Eocene and Miocene formations and the distribution of the Sparta sands of undetermined age, and the character of the Pleistocene and Recent deposits.

505 — Section of the Eocene at Old Point Caddo Landing, Harrison County, Texas, with notes upon a collection of plants from that locality, by F. H. Knowlton.

Am. Geol., vol. xvi, pp. 304-309.

Describes the section at this locality and gives a list of fossils collected, and also fossils collected at Cross Lake and Mansfield, La.

506 **Vogdes** (A. W.). Notes on Paleozoic Crustacea No. 4. On a new trilobite from Arkansas Lower Coal Measures.


Describes the characters of Griffithides ornata n. sp., from the Coal Measures of Arkansas and discusses its affinities.

507 — A supplement to the bibliography of the Paleozoic Crustacea.


This paper is a continuation of the Bibliography of Paleozoic Crustacea published in Occasional Papers of the California Academy of Sciences, No. iv, 1893, bringing it up to date (1896) and correcting some errors and omissions of the first edition.

508 **Volckening** (G. J.) and **Luquer** (L. McI.). On three new analyses of sodalite from three new localities.


See Luquer (L. McI.) and Volckening (G. J.), No. 302.

509 **Walcott** (Charles Doolittle). Lower Cambrian rocks in eastern California.


Mentions the previous descriptions of the White Mountain region. Gives a section of the rocks of Black Canyon and a summary of the entire section—4,900 feet of quartzites, limestones, and shales. Describes the character of the fauna and considers that it represents the oldest of the Cambrian faunas of western United States.

510 — The Appalachian type of folding in the White Mountain range of Inyo County, California.


Gives a general section of the rocks of this range and describes the geologic structure as exhibited in Silver and Black canyons. Illustrates the structure by several figures.

Journ. of Geol., vol. iii, pp. 312-330, with geologic map.

Refers to the existing literature on these rocks, describes their geographic position and distribution, and discusses the nomenclature adopted. Describes their stratigraphic relations and gives a vertical section of the Grand Canyon series. Includes a discussion of the conditions of their sedimentation, geologic age, and the possibility of correlating this series with others of similar lithologic character.

512 —— Discovery of the genus Oldhamia in America.


Reviews previous descriptions of this genus and describes Oldhamia (Murchisonites) occidentis n. sp., from the shales and slates of eastern New York, which are considered to belong either to the Upper Cambrian or Lower Ordovician.

513 —— Note on some appendages of the trilobite.


Describes the characteristics of antennae found at Rome, N. Y.


Gives notes and figures of sponges from Niagara rocks near Hamilton, Ontario.

515 Walter (Emma). Does the Delaware water gap consist of two river gorges?


Discusses the evidences which indicate that the Delaware River flowed in an opposite direction in pre-Glacial times and quotes from other descriptions of similar phenomena.

516 Ward (Henry A.). Preliminary notice of the Plymouth meteorite [Indiana].


Describes the finding of a meteorite at Plymouth, Ind., and gives a chemical analysis.

517 Ward (Lester Frank). The Potomac formation.


Describes the stratigraphic and paleontologic relations of the several members of the Potomac formation in the Atlantic Coastal Plain and includes a general description of the fossil floras of these beds and tables showing the geographic range of American and foreign species.

518 —— Fossil cycadean trunks of North America, with a revision of the genus Cycadeoida Buckland.


Describes specimens recently found in the Black Hills and gives a list of papers on the several species of the genus Cycadeoida Buckland. Describes C. jennyana n. sp.

519 Watts (O. P.). The cause of the movement of glaciers.

Watts (W. L.). The gas and petroleum yielding formations of the Central Valley of California.
Describes the occurrence of natural gas, petroleum, and asphaltum in this region and gives the sections of several wells and lists of the fossils collected in Cretaceous and Tertiary strata.

Weed (Walter Harvey). Montana coal fields.
Notes on the occurrence of coal in the Cretaceous rocks of Montana in a paper by E. W. Parker on the production of coal in 1894.

and Pirsson (Louis V.). Highwood Mountains of Montana.
Describes the topographic features, geologic structure, and the characteristics of each eruptive center of the Highwood Mountains. Describes the remarkable differentiation zone of Square Butte, and the characters and minerals of the dark rock, for which the name "shonkinite" is proposed.

On the igneous rocks of the Sweet Grass Hills, Montana.
Describes the topographic character and geologic structure of the Three Buttes, known as the Sweet Grass Hills. Describes the petrographic characters of the igneous rocks, quartz-diorite porphyrite, quartz-syenite porphyry, and minette occurring in this region.

Igneous rocks of Yogo Peak, Montana.
Describes the topographic character and geologic structure of the Little and Big Belt mountains, Yogo Peak forming a conspicuous summit of the Little Belt range. Describes the petrographic character of the syenite, yogoite, and shonkinite, illustrating the variation and gradation in the chemical and mineralogic composition of the Yogo rocks. Discusses the differentiation at Yogo Peak and the classification adopted.

Weidman (Samuel). On the quartz keratophyre and associated rocks of the north range of the Baraboo Bluffs [Wisconsin].
Univ. of Wis., Science ser., vol. i, pp. 35-56, pls. 1-3.
Gives a geologic map of the region and describes the areal geology and the occurrence and microscopic characters of the quartz keratophyre.
529 **Weller** (Stuart). The succession of fossil faunas at Springfield, Missouri.


The strata from which the fossils were obtained belong to the Burlington and Keokuk groups of the Mississippian series. The rocks are divided into twelve zones, and a brief description of the lithologic character and a list of the fossils collected from each zone is given. Presents a table showing the range of the species in the different zones and groups. Considers that the faunas represent the Burlington and Keokuk and that they are continuous, and should be designated by a single name. (Osage group is said to be the name first suggested.)

530 — A circum-Insular Paleozoic fauna.

Jour. of Geol., vol. iii, pp. 903-917.

Discusses and illustrates by two maps the distribution of land and water during early Devonian time and at the close of Devonian time. Discusses the evidence of a union of eastern and western Devonian provinces and the generic and specific evidences of the origin of the littoral fauna of the Ozark Island. Presents a table showing the geologic and geographic range of the genera of the Chouteau group.

531 **Wheeler** (H. A.). Note on the glacial drift in St. Louis [Mo.].


Gives a brief description of an occurrence of glacial clay and gravel in the city of St. Louis.

532 — Note on the occurrence of blende in lignite.


Describes an occurrence of blende-bearing lignite in a ferruginous sandstone and discusses its bearing on the origin of the Missouri zinc deposits.

533 — Recent additions to the mineralogy of Missouri.


Gives a list of minerals found in Missouri since the publication, in 1884, of a paper by A. V. Leonhard, "Notes on the mineralogy of Missouri," in the Transactions of the St. Louis Academy of Sciences, vol. iv, p. 440.

534 **White** (Charles A.). Notes on the invertebrate fauna of the Dakota formation, with descriptions of new molluscan forms.


Reviews the previous descriptions of marine fauna of the Dakota, describes five new species from this formation in Nebraska, and discusses the evidence of the nonmarine character of the Dakota beds.

535 — The Bear River formation and its characteristic fauna.


Reviews the history of the Bear River formation, discusses its taxonomic position, and describes its geographic distribution and the characteristics of its fossils. Includes a biologic discussion and a comparison of Bear River fauna with other American fossil faunas. Discusses the geographic and time range of Pyrgulifera.

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536 White (Charles Henry). An examination into the nature of Palseotrochis.
Reviews Emmons's description of Palseotrochis and of the strata in
which it occurs in North Carolina. Discusses the evidences of its con-
cretionary and of its organic origin.

537 White (David). The Pottsville series along New River, West
Virginia.
Discusses the use of the term Pottsville. Describes the differentia-
tion of floras in Pottsville time and the stratigraphic relations of the
series, giving vertical sections of the Piney Creek and Nuttall and Hawks
Nest sections. Discusses the paleontologic relations of the beds and
gives lists of fossils from various horizons.

538 Whiteaves (J. F.). Revision of the fauna of the Guelph forma-
tion of Ontario, with descriptions of a few new species.
ix-xv.
Mentions the species found in this formation in Ontario, with notes
on their occurrence in other formations. Describes several new species.

539 — Systematic list, with references, of the fossils of the Hudson
River or Cincinnati formation at Stony Mountain, Manitoba.
Gives a brief sketch of the discovery of Hudson River strata at this
locality and a list of fossils that have been collected.

540 Williams (Edward H.). Notes on the southern ice limit in eastern
Pennsylvania.
Presents a map showing the boundaries recognized during the pre-
vious year. Discusses the evidences of the character of the deposits
made during the advance and retreat of the ice sheet. Describes the
distribution and character of the glacial deposits of the region, the influ-
ence of the ridges on the ice advance, and the glacial gravels of the
Juniata Valley.

541 Williams (George Huntington). General relations of the granitic
rocks in the middle Atlantic Piedmont plateau.
Discusses the criteria for the recognition of ancient plutonic rocks in
highly metamorphosed terranes, the distribution and age of the Appa-
lachian igneous granites, and the gradations of Maryland granites.
Discusses the origin of Maryland pegmatites.

542 Williams (Henry Shaler). On the recurrence of Devonian fossils
in strata of Carboniferous age.
Describes the geologic relations and age of the strata near Batesville,
Ark., and remarks on the occurrence of Devonian fossils in rocks that
belong to the Carboniferous. Compares the Batesville fauna with the
Devonian faunas of Eureka, Nev., Shasta County, Cal., and of the Mis-
sissippi Valley. Describes the differences in the succession of the Devo-
nian faunas of the West and of the Appalachian province.
543 Williston (S. W.). New or little known extinct vertebrates.
Describes vertebrate remains contained in the museum of the University of Kansas.

544 — Semi-arid Kansas.
Kans. Univ. Quart., vol. iii, pp. 209-216, with map
Gives a general description of the geology of Kansas and a geologic sketch map of the State.

545 — Note on the mandible of Ornithostoma.
Kans. Univ. Quart., vol. iv, p. 61, pl. D.
Remarks on the character of the skulls of Ornithostoma from the Kansas Cretaceous.

Am. Geol., vol. xvi, pp. 275-281.
Reviews the descriptions of Owen, Hall, and Keyes of the Silurian rocks of this region, and gives the results of the author's study of these rocks in Delaware, Jones, Dubuque, and Clayton counties, Iowa. Mentions fossils collected at various localities.

547 Winchell (H. V.). [The genesis of ore deposits.]
In discussion of paper by F. Posepny on the same subject.

548 — and Grant (U. S.). Preliminary report on the Rainy Lake gold region [Minnesota].
Describes the occurrence of gold and the character and relations of the Laurentian, Couthiching, and Keewatin rocks of the Rainy Lake region. Describes the occurrence of the gold veins.

549 Winchell (N. H.). The age of the Galena limestone.
Reviews the paleontologic data regarding the age of the Galena limestone, presented by C. D. Walcott in a paper entitled "The Utica slate and related formations." Gives a brief statement of recent work of the Minnesota Geological Survey on the Lower Silurian rocks, and mentions the fossil characteristics of certain horizons.

550 — The stratigraphic base of the Taconic or Lower Cambrian.

551 — The paleontologic base of the Taconic or Lower Cambrian.
Am. Geol., vol. xv, pp. 229-234.
Describes the succession of Cambrian strata in Wales and the occurrence of volcanic outbreaks during its deposition. Refers to the determination of the succession of the Paradoxides and Olenellus faunas and the evidence of the nonconformity between the crystalline Archean rocks and the overlying sedimentaries.
552 **Winchell** (N. H.). The eruptive epochs of the Taconic or Lower Cambrian.


Describes the differences between the Archean complex and the eruptive rocks associated with the Cambrian in North America. Discusses the relations and succession of the Cambrian rocks of western New England, eastern New York, and the evidences as to the age of the Adirondack gabbros. Reviews the recent opinions as to the succession of the Adirondack rocks.

553. — Canadian localities of the Taconic eruptives.


Reviews the descriptions and classifications of the Huronian and Quebec groups in Canada by Logan, Selwyn, Ellis, and Dawson, and discusses the relations of these sedimentary and igneous rocks.

554 — Steps of progressive research in the geology of the Lake Superior region prior to the late Wisconsin survey.


Reviews the descriptions of the Huronian rocks of Lake Superior by Canadian geologists, a report by Foster and Whitney on the geology of the Lake Superior district, and reports by Brooks, Pumpelly, and Rominger on the copper-bearing rocks. Gives a summary of the author's views regarding the state of opinion on the geological questions under consideration up to the time of the Wisconsin survey.

555 — The Keweenawan according to the Wisconsin geologists.

*Am. Geol.*, vol. xvi, pp. 75-86.

Discusses the conclusions of the geologists of the Wisconsin survey from 1873 to 1879 concerning the Laurentian, Huronian, and Keweenawan rocks of the Lake Superior region, and also the published opinions of Irving and Van Hise.

556 — A rational view of the Keweenawan.

*Am. Geol.*, vol. xvi, pp. 150-162.

States several objections to separating the horizontal Lake Superior sandstones from the tilted sandstones, and discusses the evidences in support of the several statements. Discusses the evidence as to the age of the eruptive rocks which have been included in the Keweenawan series.

557 — The synchronism of the Lake Superior region with other portions of the North American continent.

*Am. Geol.*, vol. xvi, pp. 205-213.

Compares the succession of geologic events in the Lake Superior region with that in eastern New York, and explains the accompanying map of the Lake Superior region.

558 — The latest eruptives of the Lake Superior region.

*Am. Geol.*, vol. xvi, pp. 269-274.

Describes the synclinorium of the Lake Superior region, and discusses the relations of certain eruptives and the evidences indicating that the Black Bay sandstones are a part of the Keweenawan.
559 Winchell (N. H.). Comparative taxonomy of the rocks of the Lake Superior region.
Am. Geol., vol. xvi, pp. 331-337.
Presents a table showing the classification of the Lake Superior formations, and compares it with the classification adopted by other writers.

560 —— The origin of the Archean greenstones.
Describes the megascopic and microscopic characters of greenstones, and discusses the theory of dynamic metamorphism and the greenstones as a geologic terrane. This paper is mainly a critical review of a paper by Prof. G. H. Williams on "The greenstone schist areas of the Menominee and Marquette regions of Michigan; a contribution to the subject of dynamic metamorphism in eruptive rocks."

561 —— and Schuchert (Charles). Sponges, graptolites, and corals from the Lower Silurian of Minnesota.
Minn. Geol. and Nat. Hist. Surv., Final Rept., vol. iii, part i, pp. 55-95, pls. F and G.
Describes species of sponges, graptolites, and corals occurring in Lower Silurian rocks of Minnesota, including several new species.

562 —— The Lower Silurian Brachiopoda of Minnesota.
Gives a brief sketch of the occurrence of brachiopods in the Lower Silurian rocks of Minnesota and description of genera and species.

563 —— and Ulrich (E. O.). Historical sketch of investigation of Lower Silurian in the Upper Mississippi Valley.
Gives a bibliography of Lower Silurian literature of the Mississippi Valley.

564 Winslow (Arthur). Lead and zinc deposits [Missouri].
Mo. Geol. Surv., vols. vi and vii, 1894.
Gives a historical sketch of lead and zinc, a description of their compounds, and their distribution and conditions of occurrence. Describes the occurrence of lead and zinc in foreign countries and in the various States of the United States. Describes the physiography and geology of the mining regions of Missouri, and includes an account of the development and occurrences of lead and zinc ores in this State. Discusses the nomenclature of the formations and describes their distribution and structure. Gives lists of fossils collected from the Silurian rocks. Includes a discussion of the origin of lead and zinc ores and tables of production.

565 —— The geologic history of Missouri.
Am. Geol., vol. xv, pp. 81-89.
Presents a table showing the classification of the Missouri rocks. Describes the geologic changes which occurred in Algonkian, Cambrian, Silurian, Devonian, and Carboniferous times and the erosion during the Mesozoic and Tertiary eras.
566 **Winslow** (Arthur). A Paleozoic eruptive in Missouri.


Describes the occurrence of pegmatite in Lower Silurian rocks of Missouri and its petrographic characters.

567 **Woodward** (Anthony) and **Thomas** (Benjamin W.). The microscopical fauna of the Cretaceous in Minnesota, with additions from Nebraska and Illinois (Foraminifera, Radiolaria, Coccoliths, Rhabdoliths).

*Minn. Geol. and Nat. Hist. Surv., Final Rept.*, vol. iii, part i, pp. 23-54, pls. C, D, and E.

Describes the methods of microscopic preparation of the material and the foraminiferal and radiolarian remains found in the Cretaceous of Minnesota. Gives a brief sketch of the discovery of other fossils in the Cretaceous of this State.

568 **Woodward** (Henry). On some decapod Crustacea from the Cretaceous formation of Vancouver's Island, etc.


Brief notes on specimens of fossil crustaceans from the Cretaceous rocks of British Columbia and remarks on the close affinity of the European and North American forms.

569 **Woodworth** (J. B.). Three-toed dinosaur tracks in the Newark group at Avondale, N. J.


Describes briefly the tracks, which are considered to be identical with those of the Connecticut Valley.

570 **Woolman** (Lewis). Report on artesian wells in southern New Jersey.

*N. J. Geol. Surv., Rept. for 1894*, pp. 151-221, pls. v-x.

Gives the sections of many well borings cutting Miocene and Cretaceous strata and lists of fossils which were taken from the borings.

571 **Wortman** (J. L.). On the osteology of Agriocherus.


Describes the characters in which Agriocherus differs from Oreodon and discusses its systematic position. Gives a restoration of Agriocherus latifrons.

572 — **Osborn** (H. F.) and. Perissodactyls of the lower Miocene White River beds.


See Osborn (H. F.) and Wortman (J. L.), No. 363.

573 **Wright** (G. Frederick). Observations upon the Glacial phenomena of Newfoundland, Labrador, and southern Greenland.


Describes the glacial striae of Newfoundland and the evidence of pre-Glacial elevation. Describes the topographic character of the coast of Labrador and the evidences of glacial and subaerial erosion and the glacial phenomena of southern Greenland. Gives the author's conclusions as to the extent of the ice sheet in this region and on the recent date of the Glacial epoch.
574 **Wright** (G. Frederick). Dr. Holst on the continuity of the Glacial period.

Am. Geol., vol. xvi, pp. 396-399 (correspondence).

Quotes from a recent paper by Dr. Holst, "Has there been more than one Ice age in Sweden?" descriptions given of the glacial phenomena of North America.

575 —— Glacial phenomena between Lake Champlain, Lake George, and the Hudson River [New York].


Describes the present and pre-Glacial drainage of the region.
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