BIBLIOGRAPHY AND INDEX

OF

NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY
AND MINERALOGY

FOR

THE YEAR 1899

BY

FRED BOUGHTON WEEKS

WASHINGTON
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1900
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
DIVISION OF GEOLOGY,
Washington, D. C., June 12, 1900.

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 1899, and to request that it be published as a bulletin of the Survey.

Very respectfully,

F. B. Weeks.

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

The method of preparing and arranging the material of the Bibliography and Index for 1899 is similar to that adopted for the previous publications on this subject (Bulletins Nos. 130, 135, 146, 149, 156, and 162). Several papers that should have been entered in the previous bulletins are here recorded and the date of publication is given with each entry.

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

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


American Geologist, Vols. XXIII-XXIV, 1899. Minneapolis, Minn.


American Paleontology: Bulletins, Vol. III, Nos. 11-12, 1899. Ithaca, N. Y.


American Society of Civil Engineers: Transactions, Vol. XL, 1898. New York, N. Y.


California State Mining Bureau: Bulletins Nos. 13, 14, and 16, 1899. Sacramento, Cal.

California, University of, Department of Geology: Bulletin, Vol. II, Nos. 5-6, 1899. Berkeley, Cal.


Indiana Department of Geology and Natural Resources, 23d Annual Report, 1899. Indianapolis, Ind.
Iowa State University, Laboratory of Natural History: Bulletin, Vol. IV, No. 4, 1899, Vol. V, No. 1, 1899. Iowa City, Iowa.
Johns Hopkins University: Circulars, Nos. 139–141, 1899. Baltimore, Md.
Louisiana State Experiment Station, Part V, Geology and Agriculture, 1899. Baton Rouge, La.
Mexico, Instituto geologico: Bulletins Nos. 12–13, 1899. City of Mexico.
Missouri, Bureau of Geology and Mines, Biennial Report, 1898, Jefferson City, Mo.
LIST OF PUBLICATIONS EXAMINED


Neues Jahrbuch für Mineralogie, Geologie und Paleontologie: 1899, Band I-II, Hefte 1-3, Beilage-Band XIII (except abstracts), 1899. Stuttgart, Germany.


New York Academy of Science: Annals, Vol. XII, Part I, 1899, New York, N. Y.


New York State Museum, Memoir II, 1898: Bulletin Nos. 24-29, 1899. Albany, N. Y.


Paleontographica, Band XLV, Lieferung 2-6, Band XLVI, Lieferung 1-4, 1899, Stuttgart, Germany.


St. Louis Academy of Science, Transactions, Vol. IX, Nos. 1-8, 1899, St. Louis, Mo.

Science, new series, Vols. IX-X, 1899, New York, N. Y.

Scientific American, Vols. LXXX-LXXXI, 1899, New York, N. Y.

Scientific American Supplement, Vols. XLVII-XLVIII, 1899, New York, N. Y.

School of Mines Quarterly, Vol. XX, Nos. 2-4, Vol. XXI, No. 1, 1899. New York, N. Y.


South Dakota School of Mines, Bulletin, 1899, Rapid City, S. Dak.


Stone, Vol. XIX, 1899, New York, N. Y.


Wisconsin Geological and Natural History Survey, Bulletin No. 4, Economic series No. 2, 1898, Madison, Wis.
Zeitschrift für praktische Geologie, 1899. Hefte 1-12, Berlin, Germany.
BIBLIOGRAPHY.

A.

1 Abbe (Cleveland, jr.). A general report on the physiography of Maryland.
   Discusses the physiographic features of the Piedmont plateau and Appalachian provinces in Maryland.

2 Adams (F. D.). [Review of "Report on the geology and natural resources of the area included by the Nipissing and Temiscaming map sheets, comprising portions of the districts of Nipissing, Ontario, and of the county of Pontiac, Quebec," by A. E. Barlow.]

3 —— Sir William Dawson.
   Gives a sketch of the life and publications of Sir William Dawson.

4 —— Sir William Dawson.
   Gives a sketch of life of Sir William Dawson.

5 Adams (George I.). Physiography of southeastern Kansas.
   Describes the physiographic and drainage features of the region.


7 Alden (W. C.), Salisbury (R. D.) and. The geography of Chicago and its environs.
   See Salisbury (R. D.) and Alden (W. C.), No. 564.

8 Ami (Henry M.). On some Cambro-Silurian fossils from Lake Temiscaming, Lake Nipissing, and Matawa outliers.
   Gives lists of genera and species collected in the regions named.

9 —— On the subdivisions of the Carboniferous system in certain portions of Nova Scotia.
   Discusses the stratigraphic position of certain beds.


B.


20 Bailey (L. W.). The mineral resources of the Province of New Brunswick.
Describes the occurrence of iron, copper, nickel, antimony, lead, silver, gold, manganese, coal, gypsum, and other economic products.

21 Bain (Harry Foster). Geology of Carroll County [Iowa].
Iowa Geol. Surv., vol. ix, pp. 58–107, pl. ii, 11 figs. and geologic map, 1899.
Describes the physiography and the occurrence and character of the Carboniferous, Cretaceous, and Pleistocene deposits, and of coal, clays, and water supply.

22 — Notes on the drift of northwestern Iowa.
Describes the character and distribution of morainic drift, covering probable Kansan drift.

23 — The Dubuque lead and zinc mines [Iowa].
Describes the occurrence and character of the ore bodies.

24 — The western interior coal field of America.
Describes the stratigraphy of the Mississippi Valley and the character and occurrence of the coal mines.


27 — [Review of "American cements," by Uriah Cummings.]
Jour. of Geol., vol. vii, p. 627 (4 p.), 1899.

See Bibliography and Index for 1898, No. 45.

29 Barbour (Erwin Hinckley). Wells and windmills in Nebraska.
Gives a sketch of the general subject of water supply.

30 — The rapid decline of geyser phenomena in the Yellowstone National Park.
Bull. 172—2
31 Barbour (Edwin H.) and Knight (W. C.). The discovery of new invertebrates in the Dinosaur beds of Wyoming.

32 Barlow (Alfred Ernest). Report on the geology and natural resources of the area included by the Nipissing and Temiscaming map sheet, comprising portions of the district of Nipissing, Ontario, and of the county of Pontiac, Quebec.
Describes the physiography, the character and occurrence of the Archean rocks, Ordovician and Silurian strata, the petrographic character of the igneous rocks, the glacial deposits and occurrence of gold and silver.

33 —— On the origin of some Archaean conglomerates.

34 Barnard (Charles). Some recent changes in the shore line of Nantucket [Massachusetts].

U. S. Geol. Surv., Expl. in Alaska, pp. 76-84, 1899.
Describes physiography and occurrence of gold.

36 Barrois (Charles). Notice sur James Hall.

37 Bascom (Florence). The dike rocks [slate belt of New York and Vermont].
Describes the petrographic characters of certain dike rocks of the region.

38 —— [Review of "Maryland Geological Survey, vol. ii."]

39 —— On some dikes in the vicinity of Johns Bay, Maine.
Describes the occurrence and character of acid and basic dikes in the region.

40 Bayley (William Shirley). The Sturgeon River tongue [Michigan].
Describes the character and occurrence of the Basement complex and the Algonkian and igneous rocks of the region.
41 Beecher (Charles E.). Othniel Charles Marsh.
   Gives a sketch of Professor Marsh's life and work, and a chronologic list of his publications.

   Am. Geol., vol. xxiii, p. 126 (1 p.), 1899.

43 Beede (J. W.). Descriptions of some new forms of Pseudomontis from the Upper Coal Measures of Kansas.
   Kansas Univ. Quart., vol. viii, pp. 79-84, pls. xviii-xix, 1898.

44 — New fossils from the Kansas Coal Measures.

45 — On the correlation of the Coal Measures of Kansas and Nebraska.
   Reviews the literature on the subject, gives sections at the localities, and discusses their relations.

46 — and Rogers (Austin F.). New and little known pelecypods from the Coal Measures.
   Kansas Univ. Quart., vol. viii, pp. 131-134, pl. xxxiv, 1899.

47 Bell (Robert). Rising of land around Hudson Bay.

48 — Outline of geology of Hudson Bay and Strait.

49 Beyer (Samuel Walker). Geology of Story County [Iowa].
   Iowa Geol. Surv., vol. ix, pp. 159-237, pls. iii-iv, figs. 16-29, and geologic map, 1899.
   Describes the physiography and drainage, the character and occurrence of the Carboniferous and Pleistocene subdivisions and wind deposits, and the occurrence of coal, clays, and other economic products.

50 — Buried loess in Story County [Iowa].
   Describes occurrence and gives list of fossils.

51 Blake (William P.). The Pliocene skull of California and the flint implements of Table Mountain.
   Discusses bearing on the antiquity of man.

52 — Hubnerite in Arizona.
   Describes character and occurrence of the material.
53 **Blake (William P.).** The occurrence and production of wolframite in Arizona.
   Describes character and occurrence in Arizona.

54 **Blue (Archibald).** Corundum in Ontario.
   Contains notes on occurrence of corundum.

55 —— Corundum in Ontario.
   Gives a historical sketch of corundum and describes discovery and occurrence in Ontario.

56 **Böse (Emilio).** Geología de los Alrededores de Orizaba con un perfil de la vertiente oriental de la mesa central de Mexico.
   Describes the character, occurrence, and fauna of the Cretaceous rocks, and physiography and structure of Central Mexico.

57 **Bow (James A.).** Lower Seine gold mines [Ontario].
   Describes occurrence of gold.

58 **Bownocker (J. A.).** A deep pre-Glacial channel in western Ohio and eastern Indiana.
   Describes the drift covering of the region and the course of the pre-Glacial river.

59 **Branner (J. C.)** [Review of “The Upper Silurian fauna of the Rio Trombetas, State of Para, Brazil,” and “Devonian mollusca of the State of Para, Brazil,” by John M. Clarke.]
   Jour. of Geol., vol. vii, pp. 813–814, 1899.

60 **Brewer (William M.).** The west coast of Vancouver Island [British Columbia].
   Describes occurrence of ore deposits in the region.

61 —— Mining on Vancouver and Texada Islands [British Columbia].
   Describes occurrence of ore bodies in the region.

62 —— Leech River, Alberni and Skirt Mountain [British Columbia].
   Describes gold ores of the region.

63 —— Windemere mining division, East Kootenay district [British Columbia].
   Describes general geology and occurrence of copper ores.


70 The coast from Point Barrow to the Mackenzie [Alaska]. U. S. Geol. Surv., Expl. in Alaska, pp. 130-132, 1899. Describes physiography of the region.


75 Burr (H. T.). A drainage peculiarity in Androscoggin County, Maine.
   Describes a peculiar lake delta formation.

76 Bush (Katherine J.). [Review of "Synopsis of the Recent and Tertiary Leptonacea of North America and the West Indies, by W. H. Dall."]

77 Bushong (F. W.). The deep well at Madison, Kansas.
   Gives a section of the well.

C.

78 Calvin (Samuel). Iowan drift.
   Describes character and distribution of the Iowan drift, and compares with other drift formations.

79 —— A notable ride. From driftless area to Iowan drift.
   Describes the character and origin of certain topographic features in Iowa.

80 Campbell (Marius R.). Standingstone folio, Tennessee.
   Describes the general physiographic and geologic features, the character and occurrence of the Silurian, Devonian, and Carboniferous rocks, and the occurrence of coal in the quadrangle. Includes topographic, geologic, and economic maps and structure sections.


82 Case (E. C.). The development and geological relations of the Vertebrates, Part V, Mammalia (Continued).
   Describes geologic and geographic distribution of Equidæ, Lophiodontidæ, Suidæ, Tapiridæ, Oreoodontidæ, and other groups.

   Describes the geologic features of the region and occurrence of the iron ores.

84 Catlett (Charles). The iron ores of the Potsdam formation in the Valley of Virginia.
Chamberlin (T. C.). An attempt to frame a working hypothesis of the cause of Glacial periods on an atmospheric basis. Jour. of Geol., vol. vii, pp. 545-584, 667-685, 751-787, 1899. Describes the characteristics of this hypothesis and its application to known Glacial and interglacial epochs.


Lord Kelvin’s address on the age of the earth as an abode fitted for life. Science, new ser., vol. ix, pp. 889-901, vol. x, pp. 11-18, 1899.


102 —— **Hall** (J.) and. A memoir on the Paleozoic reticulate sponges constituting the family Dictyospongidae, Part I. See Hall (J.) and Clarke (J. M.), Nos. 275 and 276.

103 —— A memoir on the Paleozoic reticulate sponges constituting the family Dictyospongidae, Part II. See Hall (J.) and Clarke (J. M.), Nos. 275 and 277.


106 **Coleman (Arthur P.).** Lake Iroquois and its predecessor at Toronto [Canada.]


Describes glacial features of the region.

107 —— A new analcite rock from Lake Superior.

Jour. of Geol., vol. vii, pp. 431-436, 1899.

Describes the occurrence and petrographic and chemical characters.

108 —— Corundiferous nepheline syenite from eastern Ontario.


Describes occurrence and petrographic character.

109 —— Copper regions of the upper lakes [Ontario].


Describes the general physiographic and geologic features of the region and the character and occurrence of the Archean rocks and Algonkian and Pleistocene deposits. Includes notes on the petrographic characters of the igneous rocks.

110 —— Corundiferous nephelite syenite.


Describes character and occurrence in Ontario.

111 —— Copper in Parry Sound district [Ontario].


Describes character and occurrence of copper ores.

112 —— and **Willmott (A. B.).** Michipicoton iron range.


Describes occurrence of iron in the region.

113 **Colquhoun (A. J.).** Notes on occurrence of quicksilver in Canada.


114 **Comely (V. R. de).** The gold resources of Mexico.


Describes general occurrence of auriferous veins and placers.

115 **Cooper (A. S.).** The genesis of petroleum and asphaltum in California.

Cal. State Min. Bureau Bull., No. 16, 89 pp., 29 figs., 1899.

116 —— The genesis of petroleum and asphaltum in California.

Min. and Sci. Press, vol. lxxviii, pp. 124, 149, 182, 205 (2 figs.), 236 (1 fig.), 264 (2 figs.), 289-290 (1 fig.), 320 (1 fig.), 344 (2 figs.), 377 (1 fig.), 401-402, 432 (1 fig.), 460 (1 fig.), 1899.

Describes occurrence and discusses origin.
117 **Cooper** (A. S.). Phenomena accompanying the accumulations of bitumen.
Describes occurrences.

118 **Cope** (Edward D.). Vertebrate remains from Port Kennedy bone deposit [Pennsylvania].

119 **Crook** (A. R.). Oliver Marcy, LL. D.
Am. Geol., vol. xxiv, pp. 67–72, pl. iv, 1899.
Gives a sketch of Professor Marcy's life.

120 **Crosby** (W. O.). Archean-Cambrian contact near Manitou, Colorado.
Describes the contact, the structural features, modes of erosion, and the relation of the form of the contacts and the character of the overlying sediments.

121 — Geology of the Wachusett dam and Wachusett aqueduct tunnel of the Metropolitan waterworks in the vicinity of Clinton, Massachusetts.
Tech. Quart., vol. xii, pp. 68–96, 10 figs., 1899.
Describes the character and occurrence of the sedimentary and igneous rocks and structure features of the region.

122 — Geological history of the Nashua Valley during the Tertiary and Quaternary periods.
Tech. Quart., vol. xii, pp. 288–324, 4 pls., 1899.
Describes the physiography and character of the Tertiary and Pleistocene drainage.

123 — [Review of “The genesis of bitumens as related to chemical geology,” by S. F. Peckham.]
Am. Geol., vol. xxiii, p. 327 (4 f.), 1899.

124 — [Review of “Notes on North Carolina minerals,” by J. H. Pratt.]


127 — The glacial lake of Nashua Valley.


Describes the general physiography and geology of the San Juan region, and the occurrence and character of the Algonkian, Juratrias, Cretaceous, Tertiary, and igneous rocks of the quadrangle and discusses the geologic history. Includes topographic and geologic maps, columnar sections, and special illustrations.


130 Cummings (Uriah). American cements.


131 Curtis (G. C.) and Woodworth (J. B.). Nantucket, a morainal island.

Jour. of Geol., vol. vii, pp. 226-236, 5 figs., 1899.

Describes the physiographic, glacial, and general geologic features of the region.


Describes megascopic, microscopic, and chemical character of the gneiss and its occurrence in the petrographic provinces. Discusses sequence of eruptions in the Adirondacks.

133 — Report on the boundary between the Potsdam and pre-Cambrian rocks of the Adirondacks [New York].


Describes the geologic history and local geologic features of the region.

D.


Describes the physiography, the occurrence, and character and structure of the Cambrian and Ordovician beds, the chemical composition of the slates, and the economic geology of the region. Includes a bibliography of the subject.
135 Dall (Wm. H.) Synopsis of the Recent and Tertiary Leptonacea of North America and the West Indies. 

136 Daly (R. A.). On the optical characters of the vertical zone of amphiboles and pyroxenes; and on a new method of determining the extinction angles of these minerals by means of cleavage planes. 

137 —— On a new variety of hornblende. 

138 —— The peneplain. A review. 
Discusses Professor Tarr’s criticisms of the peneplain theory.

139 Darton (Nelson Horatio). Preliminary report on the geology and water resources of Nebraska west of the one hundred and third meridian. 
Describes the physiography, the character and occurrence of the Pleistocene, Tertiary, and Cretaceous strata and of the underground waters.

140 —— The bad lands of South Dakota. 
Describes the general geologic and physiographic features of the region.

141 —— Fossil fish in Jurassic of Black Hills. 

141a —— Mesozoic stratigraphy in southwestern Black Hills. 

141b —— Relations of Tertiary formations in western Nebraska region. 

141c —— Shore line of Tertiary lakes on slope of the Black Hills. 

142 —— Clarke (F. W.) and. Hydromica from New Jersey. 
See Clarke (F. W.) and Darton (N. H.), No. 95.

143 Davis (H. J.). Modification in the Jonathan Creek drainage basin [Ohio.] 
Describes the physiographic features of the region.
144 **Davis** (W. M.). *The peneplain.*  
Am. Geol., vol. xxiii, pp. 207–239, pl. vii, 1899.  
Discusses evidences bearing on the existence of peneplains.

145 **Davison** (J. M.). *Platinum and iridium in meteoric iron.*  

146 **Dawson** (George M.). *Summary report of the Geological Survey department [Canada] for the year 1897.*  
Contains a general summary of the operations of the survey and of the annual reports of the several geologists.

147 — *Summary report of the Geological Survey department of [Canada] for the year 1898.*  

148 — *The coals of the Canadian northwest and Rocky Mountain region.*  
Describes occurrence and distribution.

149 — *A remarkable landslip on the Riviere Blanche, Port Neuf Co., Quebec.*  

150 — *Duplication of geologic formation names.*  
Discusses use of the name Cache Creek formation.

151 **Dawson** (Sir J. William). *Note on an echinoderm collected by Dr. Ami at Bessers, Ottawa River, in the Pleistocene (Leda clay).*  
Contains notes on a specimen representing a species of Spatangus or Brissus.

152 — *Addendum to a note of Nova Scotia Carboniferous Entomos traca in number for January, 1897.*  
Gives figure of Carbonia rankiniana.

Gives a general account of the mineral resources of these islands.

154 **Day** (William C.). *The coal and pitch coal of the Newport mine [Oregon].*  
Discusses the character and origin of certain portions of these coal beds.

Contains notes on the occurrence of fossils in these shales and recommendations as to the best part of the year to collect fossils from this region.

Describes the topographic and geologic features of the region and the occurrences and character of the coals.

Describes microscopic characters of the material and origin of the Paleotrochis structure.


Describes material from Mount St. Helens, Washington.


Describes occurrence of gold, silver, copper, and iron.

Contains notes on occurrence.


E.

Describes crystallographic characters.
167 **Eastman** (C. R.). Descriptions of new species of Diplodus teeth from the Devonian of northeastern Illinois.
   Describes two new species of Diplodus.

168 **Eckel** (E. C.). Intrusives in the Inwood limestone of Manhattan Island.
   *Am. Geol.*, vol. xxiii, pp. 122–124, pl. iii, 1899.
   Describes the relations of the formations and the character and occurrence of the intrusives.

169 **Ehrenfeld** (Frederick). A study of the igneous rocks at York Haven and Stony Brook, Pa., and their accompanying formations.
   Thesis presented to the faculty of the department of philosophy of the University of Pennsylvania, 24 pp., 1 pl., 1898. (Not seen.)

170 **Eldridge** (George H.). The extreme southeastern coast. The coast from Lynn Canal to Prince William Sound [Alaska].
   Describes occurrence of gold and coal in the region.

171 —— The Sushitna drainage area [Alaska].
   Describes general physiographic and geologic features.

   Describes the physiography, the character and occurrence of the granite and sedimentary formations, and the geologic structure and mineral resources of the region.

173 **Elftman** (Arthur H.). Preliminary report of field work during the summer 1895.
   Brief notes on the occurrence of anorthosites.

174 —— List of rock samples collected in northeastern Minnesota in 1895, 1896, and 1897 (prepared by U. S. Grant).

175 **Ells** (R. W.). Problems in Quebec geology.
   Gives a general review of the publications on Quebec geology and discusses the problems involved.

176 **Emerson** (B. K.). The geology of eastern Berkshire County, Massachusetts.
   Describes the occurrence, character, and structure of the pre-Cambrian, Cambrian, Silurian, Glacial, and post-Glacial deposits, and gives an account of the mineral resources and a mineral lexicon and bibliography of the region.
177 Emerson (B. K.). Differences of batholithic granites, according to depth of erosion.

178 Emmons (S. F.). Plutonic plugs and subtuberculant mountains.

F.

179 Fairbanks (Harold W.). Some notes on the petroleum deposits of California.
Discusses occurrence and origin.

Describes the glacial lakes that occupied the various valleys of the region.

Describes general character, extent, and shore lines and elevations of the glacial lakes.

Describes geologic structure and occurrence of gold in the region.

183 Farrington (Oliver C.). A fossil egg from South Dakota.


185 Fleming (Mary A.). The potholes of Fosters Flats (now called Niagara Glen) on the Niagara River.

186 Foerste (August F.). Age and development of the Cincinnati anticline.

187 — Shaler (N. S.), Woodworth (J. B.), and. Geology of the Narragansett Basin.
See Shaler (N. S.), Woodworth (J. B.), and Foerste (A. F.), No. 582.
188 **Fontaine** (W. M.). Notes on Lower Cretaceous plants from the Hay Creek coal field, Crook County, Wyoming.
Describes the section of the coal beds and the fossils collected.

189 —— See **Ward** (L. F.), No. 690.

190 **Foote** (H. W.), **Penfield** (S. L.) and. Chemical composition of tourmaline.
See Penfield (S. L.) and Foote (H. W), No. 520.

191 **Foote** (Warren M.). Note on a new meteoric iron found near the Tombigbee River, in Choctaw and Sumter counties, Alabama.
Describes the occurrence and physical and chemical characters of the material.

192 —— Note on a new meteoric iron found near Iredell, Bosque County, Texas, U. S. A.
Describes occurrence and chemical character of the material.

193 **Forsyth** (A.), **O’Harra** (C. C.) and. Notes on the geology and mineral deposits of a portion of the southern Black Hills.
See O’Harra (C. C.) and Forsyth (A.), No. 502.

194 **Fowler** (S. S.). Notes on the Ymir mine and its mill practice [British Columbia].
Describes geologic features and occurrence of gold and silver ores.

195 **Fuller** (Myron L.). Season and time elements in sand-plain formation.
Jour. of Geol., vol. vii, pp. 452-462, 1 fig., 1899.
Discusses origin of certain glacial deposits.

196 —— Notes on an unusual orientation of phenocrysts in a dike.
Tech. Quart., vol. xii, pp. 175-179, 2 figs., 1899.
Describes phenocrysts of a porphyritic granite.

197 —— The occurrence and uses of mica.

198 —— [Review of “Mineralogical notes, analyses of tysonite, bastnasite, prosopite, jeffersonite, covellite,” etc., by W. F. Hillebrand.]
**Bull. 172—3**


See Bibliography and Index for 1899, No. 117.


G.


   vol. xxiii, p. 103 (81.); Science, new ser., vol. ix, p. 143 (1 p.), 1899.
   Describes sculpture of the Niagara, Clinton, and Medina strata.

218 — Dislocation at Thirtymile point, New York.
   Describes overturned fold in Medina formation and discusses origin of
   the structure.

219 — Ripple marks and cross bedding.
   Geol. Soc. Am., Bull., vol. x, pp. 135-140, pl. xiii, 5 figs., 1899. Abstracts:
   Am. Geol., vol. xxiii, p. 102 (1 p.); Science, new ser., vol. ix, p. 138 (1 p.),
   1899.
   Describes occurrence in the Medina formation.

220 — [Review of “The great ice dams of Lakes Maumee, Whitley,
   and Warren,” by F. B. Taylor.]
   Jour. of Geol., vol. vii, pp. 621-623, 1899.

221 — Recent earth movement in the Great Lakes region.
   vol. vii, pp. 239-241, 1899.
   See Bibliography and Index for 1898, No. 289.

222 Girty (George H.). Preliminary report on Paleozoic invertebrate
   fossils from the region of the McAlester coal field, Indian
   Territory.
   1899.
   Describes the occurrence of the fossils and the relations of the beds
   in which they occur, and the general characteristics of the Lower Helder-
   berg, Niagara, and Ordovician faunas. Discusses their relations to other
   faunas and describes the characters of the species collected.

223 — Devonian and Carboniferous fossils. [Yellowstone National
   Park.]
   Discusses the relations of the faunas and describes the fossils collected.

224 Glenn (L. C.). The Hatteras axis in Triassic and Miocene time.
   Describes the difference in Triassic sedimentation in North Carolina
   and in the Middle and North Atlantic States, and the occurrence of a
   land area in the Carolina region in early Miocene time.

225 Goode (John Paul). The piracy of the Yellowstone.
   Jour. of Geol., vol. vii, pp. 261-271, 5 figs., 1899.
   Describes the post-glacial history and drainage of the Upper Yellow-
   stone Valley.

226 — [Review of “Physical geography of New Jersey,” by R. D.
   Salisbury.]
227 **Gorby** (S. S.). The onyx deposits of Barren County, Kentucky.


Describes character and occurrence of the deposits.

228 **Gould** (C. N.). On the finding of fossil insects in the Comanche Cretaceous of Kansas.


229 **Grabau** (Amadeus W.). The paleontology of the Eighteen Mile Creek and the Lake Shore sections of Erie County, New York.


Discusses the elements of paleontology and describes the genera and species of fossils collected from the Devonian strata of the region. Includes bibliography and a discussion of the relation of marine bionomy to stratigraphy.

230 — The faunas of the Hamilton group of Eighteen-mile Creek and vicinity, in western New York.


Describes the stratigraphic features and the vertical distribution of the fossils of the Hamilton group of the region.

231 — **Moniloporidse**, a new family of Paleozoic corals.


232 — Some modern stratigraphic problems.


233 **Grant** (C. C.). Geological notes.


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234 **Grant** (U. S.). The geology of Cook County [Minnesota].


Describes the physiography and occurrence of the Archean and Cambrian rocks and glacial history and deposits of the region.

235 — The geology of the Pokegama Lake plate [Minnesota].


Describes character and occurrence of the Cambrian strata of the region.

236 — The geology of the Grand Rapids plate [Minnesota].


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Describes briefly the occurrence of granitic rocks and Cambrian deposits.

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Describes the character and occurrence of the Archean and Cambrian rocks.

239 — The geology of the Snowbank Lake plate [Minnesota].

Describes drift deposits and Archean rocks of the region.

240 — The geology of the Fraser Lake plate [Minnesota].

Describes the topography and the occurrence and character of the Archean and Cambrian rocks.

241 — The geology of the Akeley Lake plate [Minnesota].

Describes the physiography, the character and occurrence of the Cambrian and Archean rocks and occurrence of iron ores.

242 — The geology of the Gunflint Lake plate [Minnesota].

Describes character and occurrence of the Cambrian rocks.

243 — The geology of the Rove Lake plate [Minnesota].

Describes character and occurrence of the Cambrian rocks.

244 — The geology of the Mountain Lake plate [Minnesota].

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245 — Record of geological field work in northern Minnesota, 1892 to 1898.


246 — List of rock samples collected in northeastern Minnesota in 1898.

247 Grant (U. S.). The geology of Itasca County [Minnesota].
Describes the physiographic features and the character and occurrence of Archean rocks and Cretaceous and glacial deposits.

248 — [Review of “The educational series of rock specimens collected and distributed by the United States Geological Survey,” by J. S. Diller.]

249 — [Review of “Recent earth movement in the Great Lakes region,” by G. K. Gilbert.]

250 — [Review of “Geology of Lake Placid region,” by J. F. Kemp.]

251 — [Review of “The hardystonite, a new calcium zinc silicate from Franklin Furnace, New Jersey,” by J. E. Wolff.]


253 — A possible driftless area in northeastern Minnesota.
Describes the geologic features of the region and discusses the evidence bearing on the occurrence of a nonglaciated area.

254 — See Elftman (A. H.), No. 174.

255 — Winchell (H. V.) and. Preliminary report on the Rainy Lake gold region [Minnesota].
(See Winchell (H. V.) and Grant (U. S.), No. 780.)

256 Gratacap (L. P.). Notes on the limonite beds on Ocean terrace [Staten Island, New York].
Notes on occurrence of limonite.

257 — The Comstock lode [Nevada].

258 — A plea for the popular exposition of lithology for museum purposes.
259 Greene (G. K.). Contributions to Indiana Paleontology, Pts. II and III.
Ewing and Zeller, New Albany, Ind., pp. 8–25, pls. 4–9, 1899. (Not seen.)


261 Gresley (W. S.). Side light upon coal formation.
Describes certain features of coal veins and associated strata and discusses their bearing on the origin of coal.

262 — Possible new coal plants in coal.
Describes structure resembling plants.

263 Grinnell (George Bird). The glaciers in Montana.
Describes existing glaciers.

Describes the successive stage of development of shore lines as influenced by uplift and depression.

265 — Classification of coastal forms.
See Bibliography and Index for 1898, No. 322.

266 — Note on monadnocks.

267 — Thames River in Connecticut.

H.

Describes the topographic features, the character and occurrence of the Archean, Cambrian, Silurian, Devonian, Carboniferous, Cretaceous, and volcanic rocks of the Crandall and Ishawooa quadrangles. Includes topographic and geologic maps and columnar sections.

269 — Descriptive geology of Huckleberry Mountain and Big Game Ridge [Yellowstone National Park].
Describes the general physiographic and geologic features of the region.


295 — A brief reconnaissance of the Tennessee phosphate fields.
Describes the occurrence and character of the phosphate deposits.

296 — Physiography and geology of region adjacent to the Nicaragua Canal route.
Describes physiographic features, climate, the geology of the region, the processes of rock decay, and the recent geologic history.

297 — Physiography of the Nicaragua Canal route.
Describes the physiographic features of the region.

298 — The Nicaragua Canal route.
Science, new ser., vol. x, pp. 97-104, 1 fig., 1899.
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299 Heilprin (Angelo). Geology of the Klondike gold fields.

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Describes the occurrence and phenomena accompanying dirtstorms in the Mississippi Valley.

301 — Origin and age of certain gold "pocket" deposits in northern California.
Describes the geologic features of the region, and the character, age, and origin of the gold deposits.

302 — Age and origin of certain gold deposits on the Isthmus of Panama.
Am. Geol., vol. xxiv, pp. 73-77, 1899.
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311 Hill (Benj. F.). Notes on a set of rocks from Wyoming, collected by Prof. Wilbur C. Knight, of the University of Wyoming. School of Mines Quart., vol. xx, pp. 357–364, 5 figs., 1899. Describes the petrographic characters of the rocks collected.


316 — Mineralogical notes, analyses of tysonite, bastnasite, prosopite, jeffersonite, covellite, etc.

317 — Analysis and composition [of roscoelite].
Describes methods of analysis and chemical composition of the material.

318 — Mineralogical notes, melonite (?), coloradoite, petzite, hessite.

319 Hills (Richard Charles). Elmorofolio, Colorado.
Describes the physiography, the occurrence, and character of the Cretaceous, Neocene, and igneous rocks, and the occurrence of coal and other economic products. Includes topographic and geologic maps, structure, and columnar sections, and special illustrations.

Describes character and occurrence of Algonkian and Cambrian rocks, the occurrence of organic remains in the Algonkian strata and the character of a new species from the Middle Cambrian.

Gives historical sketch of the discovery of diamonds in this region and describes their character, occurrence, and origin.

322 — Goldschmidtite, a new mineral.
Describes the chemical and crystallographic characters of goldschmidtite and sylvanite.

323 — Spiral fulgurite from Wisconsin.
Describes character and occurrence of the material.

Describes occurrence and chemical composition.

Describes general geology and character of the glacial moraines.
326 Hollick (Arthur). The relation between forestry and geology in New Jersey. 

327 — Geology and geography of the American Association for the Advancement of Science. 
Contains brief abstracts of papers read.

328 — A report on a collection of fossil plants from northwestern Louisiana. 

329 — Notes on deep wells at Princes Bay and Huguenot [Staten Island, New York]. 

330 Holmes (Chas.). Coal and coal mining in Michigan. 
Describes occurrence and character of the coal.

331 Holmes (J. A.). Mica deposits in the United States. 
Describes the occurrence, character, structure, and origin of mica deposits.

332 — Some geologic conditions favoring water-power developments in the South Atlantic region. 

333 Holmes (W. H.), McGee (W J) and. The geology and archeology of California. 
See McGee (W J) and Holmes (W. H.), No. 455.

Describes the general features of clay and their products manufactured in the State.

335 — Feldspars and kaolins of southeastern Pennsylvania. 
Describes character, occurrence, and distribution in the region.

336 — Kaolin: Its occurrence, technology, and trade. 
Describes occurrence and distribution in the United States.

337 — Feldspar: The occurrence, mining, and uses. 
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Gives a summary of the papers read.

341 — See Whitfield (R. P.), No. 730.

342 Hovey (Horace C.). The life and work of James Hall, LL. D.


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

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Describes the character, occurrence, and relations of the sedimentary and volcanic rocks of the region.


In discussion of paper by Archibald Blue on the same subject.

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Describes petrographic and chemical characters.

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Recent basalts [Yellowstone National Park].
Describes their distribution and petrographic characters.

[Remarks on the use of the term plutonic plugs.]
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Describes the effects of the intrusive on the diabase and sedimentary rocks.
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359 Jefferson (M. S. W.) Beach cusps.
Describes mode of formation on Massachusetts coast.

360 Jenney (W. P.). See Ward (L. F.), No. 690.

361 Johnson (Charles W.). A new Pliocene Polygyra from Florida.
Describes Polygyra caloosaensis n. sp.


363 —— The work of glaciers in high mountains.

364 —— Subsidence basins of the high plains.

Gives notes on occurrence and fauna in Kansas.

366 Jones (T. Rupert) and Woodward (Henry). Contributions to fossil Crustacea.
Describes Bellinurus grandsevus from Nova Scotia.

Describes occurrence, character, mineral associates, and crystallography of the material.

367a Jukes-Browne (A. J.), Harrison (J. B.) and. The Oceanic deposits of Trinidad [British West Indies].
See Harrison (J. B.) and Jukes-Browne (A. J.), No. 284.

K.

368 Kain (S. W.), Matthew (G. F.) and. On artesian and fissure wells in New Brunswick.
See Matthew (G. F.) and Kain (S. W.), No. 473.

369 Kelvin (Lord). The age of the earth as an abode fitted for life.
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370 Kemp (James Furman). The titaniferous iron ores of the Adirondacks.

Describes the chemical composition, geologic features, local occurrence, and origin of the titaniferous ores of the region. Reviews the general occurrence of these ores in other regions.

371 Granites of southern Rhode Island and Connecticut with observations on Atlantic coast granites in general.

Describes petrographic character of the Rhode Island granites and the occurrence and character of the granites in the States and Provinces of the Atlantic coast.

372 A brief review of the titaniferous magnetites.

Describes occurrence and chemical characters of the magnetite ores of the United States and other countries.

373 Metamorphosed basic dikes in the Manhattan schists, New York City.


Contains abstracts of papers presented at the meeting.

375 Kendall (J. D.). The silver-lead deposits of the Slocan, British Columbia.

Describes the occurrence and character of the deposits.

376 Keyes (Charles R.). American homotaxial equivalents of the original Permian.

Describes character, occurrence, and faunas of probable Permian strata and discusses their homotaxial relations to the Permian of Europe.

377 Some physical aspects of general geological correlation.

Discusses methods and criteria to be employed in geologic correlation.

378 The Missourian series of the Carboniferous.

Am. Geol., vol. xxiii, pp. 298-316, 1899.
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379 [Review of a review of Wachsmuth and Springer's Monograph on Crinoids, by F. A. Bather.]

Am. Geol., vol. xxiv, pp. 56-58, 1899.
380 Keyes (Charles R.). On stratification planes.
   Describes bedding planes, terranal planes, great planes of sedimentation, and erosion planes.

381 — [Review of “Geology of the Aspen mining district, Colorado,” by J. Edward Spurr.]

382 Kimball (James P.). The granites of Carbon County, Montana: A division and glacier field of the Snowy Range.
   Describes the physiographic features of the region and the occurrence of glaciers.

383 Kindle (Edward M.). The Devonian and Lower Carboniferous faunas of southern Indiana and central Kentucky.
   Describes briefly the stratigraphy of the region and gives notes on the fauna of various sections and a list showing range and distribution of the species. Discusses correlation of the faunas.

384 King (Francis H.). Principles and conditions of the movements of ground water.

385 King (Helen Dean). Edward Drinker Cope.
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   Describes character, occurrence, and faunas of the Kansas and Nebraska Permian strata.

388 — Some new data for converting geological time into years.
   Describes the method adopted of estimating the time of the erosion of certain Miocene beds in Wyoming.

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Describes two species of Araucarioxylon.

Fossil flora [Yellowstone National Park].
Describes the fossil flora collected in the region and their relations, and the occurrence and character of the fossil forests.

See Bibliography and Index for 1898, No. 450.

Kiimmel (Henry B.). The extension of the Newark system of rocks.
Describes the extension of the Newark system into New York.

The Newark rocks of New Jersey and New York.
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L.

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Describes properties, occurrence, and distribution of clay deposits in Georgia.

Notes on the Cretaceous and associated clays of middle Georgia.
Describes the relations of the Cretaceous and Tertiary strata and character of the clays of the Potomac formation.
Describes the structure and occurrence of the veins.

402 — Boulder region, Colorado.
General notes on the region.

403 — Placer mining in California.

404 — Natural gas in Colorado.
Describes occurrence and origin.

405 — New Almaden mines of Santa Clara County, California.

406 — Observations on some prospects and mines around Breckenridge, South Park, Colorado.
Contains notes on the geology of the region.

407 — California gold mines.

408 — Coal fields of Colorado.

409 — California asphaltum.
Describes occurrence and character of the material.

410 — Grand River coal field of Colorado.
Describes geological occurrence of coal in this region.

411 — Description of Raven Hill, Cripple Creek, and its ore deposits [Colorado].

412 — Calaveras County mines [California].

413 Lambe (Lawrence M.). A revision of the genera and species of Canadian Paleozoic corals. The Madreporaria perforata and Alcyonaria.

414 — On some species of Canadian Paleozoic corals.
Describes structural details not given in original descriptions, and a supposed new species.
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Contains brief notes on the fossils collected.

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Contains notes on Labechia huronensis Billings.

Describes the structure, occurrence and character of the sedimentary and igneous rocks and the occurrence of diabase intrusives in the Huronian.

418 — Water resources of the Lower Peninsula of Michigan.
Describes the water supply of the region and the general physiographic and geologic features.

419 — Lower Michigan mineral waters.
U. S. Geol. Surv., Water-Supply Paper No. 31, 97 pp., 4 pls., 2 figs., 1899.
Describes chemical composition and occurrence.

420 — Note on a method of stream capture.
Describes occurrence in Michigan.

421 — Magmatic differentiation in rocks of the copper-bearing series.

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Describes occurrence of gold and silver.

423 Le Conte (Joseph). The Ozarkian and its significance in theoretic geology.
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439 Logan (W. N.). A discussion and correlation of certain subdivisions of the Colorado formation.
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440 —— Some additions to the Cretaceous invertebrates of Kansas.

441 —— [Review of "The Cretaceous of the Black Hills as indicated by the fossil plants," by Lester F. Ward, with the collaboration of Walter P. Jenney, William M. Fontaine, and F. H. Knowlton.]
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444 —— The fossil bison of North America.

445 —— A new snake from the Eocene of Alabama.
Describes Pterosphenus schucherti.

446 —— The characters of Bison occidentalis, the fossil bison of Kansas and Alaska.
Compares this species with B. antiquus.

Describes occurrence in Frazer River region.

448 Luquer (L. M.). Minerals in rock sections: The practical methods of identifying minerals in rock section with microscope; especially arranged for students in technical and scientific schools.

449 Luther (D. D.). The brine springs and salt wells of the State of New York and the geology of the salt district.
Describes the occurrence of salt and the character and occurrence of the subdivision of the Silurian and Devonian in the salt district.
M.

450 Macbride (T. H.). Geology of Humboldt County [Iowa].

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452 —— Gold deposits of Georgia. Paper read before the International Gold Mining Convention, Denver, Colo., July 8, 1897. 17 pp. 1 map. 1898. Not seen.

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455 —— and Holmes (W. H.). The geology and archeology of California.


456 McInnes (William). Report on the geology of the area covered by the Seine River and Lake Shebandowan map sheets, comprising portions of Rainy River and Thunder Bay districts, Ontario.

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457 MacKellar (Peter). The gold-bearing veins of Bag Bay, near Lake of the Woods.


458 Maguire (Don). Central Idaho gold field.

Describes occurrence of gold.

459 —— Snake River gold fields of Idaho.


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462 — The evolution of climates (concluded).  
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Describes the stratigraphic succession above the Paleozoic in the Black Hills, and the character and occurrence of the footprints.

464 — Note on a Bridger Eocene carnivore. (Note prepared by J. L. Wortman.)  
Proposes name *Telmatocyon*, basing the genus on the remains referred to *Limnocyon riparius*.

465 — The origin of mammals.  

466 — On the families of Sauropodous Dinosauria.  

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Describes the character and occurrence of Cambrian rocks in a portion of New Brunswick, and the character and development of the fossil fauna.

469 — A Paleozoic terrane beneath the Cambrian.  
Describes the Etcheminian fauna and the sections in which it is found, and discusses relations to Cambrian faunas.

470 — A new Cambrian trilobite.  
Describes *Metadoxides magnificus* n. sp. and compares North American and European Cambrian faunas.

471 — [Review of “Fossil Medusæ,” by Charles D. Walcott].  

472 — [Review of preliminary notice of the Etcheminian fauna of Newfoundland.]
473 Matthew (George F.) and Kain (S. W.). On artesian and fissure wells in New Brunswick.

474 Matthew (W. D.). Is the White River Tertiary an aeolian formation?
Discusses the origin of the formation.

Describes the physiography, the route of travel, the occurrence of Cretaceous and pre-Cretaceous sediments, and the occurrence of gold and coal.

476 —— The Kenai Peninsula [Alaska].
Brief summary of occurrence of gold and coal.

477 —— The Kadiak Islands. The Alaska Peninsula and the Aleutian Islands [Alaska].
Describes physiographic features and occurrence of gold and coal.

478 —— Schrader (F. C.) and. [Notes on the geology of portions of Alaska].
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Describes the occurrence of the fossil remains in the cave and the methods of excavation.

480 Merriam (John C.). The Tertiary sea-urchins of middle California.
Describes the history, relationship, and characters of the species.

481 —— The fauna of the Sooke beds of Vancouver Island.

482 Merrill (George P.). A discussion of the use of the terms rock-weathering serpentinization and hydrometamorphism.
Discusses the effects of rock weathering and accompanying phenomena.
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Describes the general geology of the region and the occurrence and origin of the talc.

497 Newsom (J. F.). The effect of sea barriers upon ultimate drainage.

498 Nicol (Wm.). Crystallized pyrrhotite from Frontenac County [Ontario].
Describes crystallographic character.


500 — Preliminary notes on the surface geology of the Yukon Territory [Alaska].
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501 Norton (W. H.). Geology of Scott County [Iowa].
Describes the physiography and drainage, the character and occurrence of the Silurian, Devonian, Carboniferous, and Pleistocene deposits, and the occurrence of coal, building stone, clay, and other economic products.

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503 Ordoñez (Ezequiel) and Rangel (Manuel). El Real del Monte [Mexico].
Describes the physiography, the mineral resources, and the general geology of the region.

504 Orton (Edward). The rock waters of Ohio.
Describes the lithologic characters of the geologic subdivisions of Ohio and the occurrence and character of the underground waters.
505 **Orton** (Edward). Geological structure of the Iola gas field [Kansas].


Describes general geology of the region and the occurrence and character of the gas-bearing rocks.

506 — Petroleum and natural gas in New York.


507 — The geology of Columbus and vicinity [Ohio].


508 **Osborn** (Henry Fairfield). A complete mosasaur skeleton, osseous and cartilaginous.


509 — A skeleton of Diplodocus.


510 — Origin of mammals.


511 — Frontal horn on Aceratherium incisivum.


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512 **Palache** (Charles). The crystallization of the calcite from the copper mines of Lake Superior.


513 — Powellite crystals from Michigan.


Describes crystallographic characters of the material.

514 — Epidote and garnet from Idaho.


Describes occurrence and crystallographic characters of the material.


516 **Parmenter** (C. S.). Fossil turtle cast from the Dakota epoch.


517 **Patton** (Horace B.). Tourmaline and tourmaline schists from Belcher Hill, Colorado.


Describes occurrence of tourmaline as vein mineral and impregnating schists and discusses origin.
518 Pearson (H. W.). Is the so-called "Upheaval of Scandanavia" apparent or real?
Discusses the variation of coast lines as effected by tide and currents to explain the phenomena ascribed to continental upheaval.

519 Peckham (S. F.). Genesis of bitumen as related to chemical geology.

520 Penfield (S. L.) and Foote (H. W.). Chemical composition of tourmaline.
Reviews the literature on tourmaline and describes methods of analysis, the results obtained, and the constitution of tourmaline.

Describes crystallographic and chemical characters of the material.

522 —— Some new minerals from the zinc mines at Franklin, N. J., and note concerning the chemical composition of ganomalite.
Describes occurrence and character of brancockite, glaucochroite, nasonite, ganomalite, leucophenite.

523 Perrine (Charles D.). Earthquakes in California in 1898.

U. S. Geol. Surv., Expl. in Alaska, pp. 64-75, 1899.
Describes physiography, the occurrence of metamorphic and sedimentary rocks, and occurrence of gold and copper.

525 Phillips (Alexander Hamilton). Mineralogical structure and chemical composition of the trap of Rocky Hill, N. J.
Describes the megascopic, microscopic, and chemical character of the dike rock.

527 Pirsson (L. V.). Phenocrysts of intrusive igneous rocks.
   Describes the occurrence of phenocrysts and the evidences indicating that they have been formed in place.

528 —— [Reviews of "Pre-Cambrian igneous rocks of Fox River Valley, Wisconsin," by S. Weidman; and "West Virginia Geological Survey, vol. i."]


530 Post (W. S.), Spurr (J. E.) and Report on the Kuskokwim expedition [Alaska].
   See Spurr (J. E.) and Post (W. S.), No. 601.

531 Pratt (J. H.). Occurrence, origin, and chemical composition of chromite.
   Includes description of the Webster chromite for which the name mitchellite is proposed.

532 —— Separation of alumina from molten magmas, and the formation of corundum.
   Gives results of field observations and laboratory experiments.

533 —— Notes on North Carolina minerals.

534 —— See Judd (J. W.) and Hidden (W. E.), No. 367.

535 Prosser (Charles S.). Correlation of Carboniferous rocks of Nebraska with those of Kansas.
   Describes character, occurrence, and relations of the Carboniferous rocks of the region.

536 —— Note on the distribution of the Cheyenne sandstone.
   Describes distribution in Kansas.

537 Purdue (A. H.). [Review of "The Department of geology and natural resources of Indiana, Twenty-third Annual Report."]
538 **Purington** (Chester Wells). Economic geology [of Telluride quadrangle, Colorado].
Describes the fissures and veins of the region, and the occurrence, character, and origin of the gold and silver ores.

539 **Rangel** (Manuel), **Ordoñez** (Ezequiel) and. El Real del Monte.
See Ordoñez (E.) and Rangel (M.), No. 503.

Describes occurrence of the syenite and associated rocks, and the chemical and microscopical characters of the material collected.

541 — **Turner** (H. W.) and. Big Trees folio, California.
See Turner (H. W.) and Ransome (F. L.), No. 639.

542 **Reed** (F. R. Cowper). A new trilobite from Mount Stephen, Field, B. C.
Geol. Mag., dec. iv, vol. vi, pp. 358-361, 1 fig., 1899.
Describes Oryctocephalus reynoldsi n. sp.


544 **Reid** (Harry Fielding). Stratification of glaciers.
Describes observations of stratification of glaciers.

545 — The variations of glaciers, IV.
Contains summary of 3d annual report of international committees on glaciers.

546 **Ries** (Heinrich). A report on Louisiana clay samples.
Describes the origin, structure, and chemical and physical properties of the clays.

547 — The ultimate and rational analysis of clays and their relative advantages.

548 **Rickard** (Forbes). Notes on the vein formation and mining of Gilpin County, Colorado.
Describes the character and occurrence of the ore bodies and veins.

549 **Rickard** (T. A.). The Cripple Creek gold field [Colorado].
Bull. 172—5
550 Riggs (E. S.). The Milaguludæ; an extinct family of sciuromorph rodents.

551 Rogers (Austin F.). Cupro-goslarite, a new variety of zinc sulphate.
   Describes occurrence and chemical character.

552 —— Normal ankerite from Phelps County, Missouri.
   Describes occurrence and chemical character.

553 —— Beede (J. W.) and. New and little known pelecypods from the Coal Measures.
   See Beede (J. W.) and Rogers (A. F.), No. 46.

554 Ropes (Leverett S.). Corundum mining in North Carolina and Georgia.
   Contains notes on the occurrence of corundum.

555 Roy (Andrew). Jackson County; Ohio.
   Describes occurrence of coal.

556 Russell (Israel C.). [Remarks on the use of the term plutonic plugs.]
   Jour. of Geol., vol. vii, pp. 96–97, 1899.

557 —— [Review of “The physiography and geology of the Nicaraguan Canal route,” by C. Willard Hayes.]

558 —— Geology of Cascade Mountains in Washington.

559 Safford (J. M.) and Schuchert (Charles). Camden chert of Tennessee and its Lower Oriskany fauna.
   Describes the character and occurrence of the strata and its contained fauna. Discusses correlation with Clear Creek limestone of Illinois.

   N. J. Geol. Surv., Rept. for 1898, pp. 1–41, pl. i, figs. 1–8, 1899.
   Describes the origin of some of the soils of the State.

561 —— [Review of “Rivers of North America; a reading lesson for students of geography and geology,” by I. C. Russell; and “Earth sculpture or the origin of land forms,” by J. Geikie; and “Physical Geography,” by W. M. Davis.]

563 — [Review of “Shoreline topography,” by F. P. Gulliver.]

564 — and Alden (W. C.). The geography of Chicago and its environs.
Chicago Geog. Soc., Bull. No. 1, 64 pp., 1899. (Not seen.)

Am. Geol., vol. xxiv, pp. 263–276, pl. xii, 1899.
Describes Strophocrinus dicyclicus n. gen et sp. and discusses the relationship of Crinoidea and Cystoidea.

566 — What is the loess?
Describes occurrence and origin of the loess.

567 — Lichenaria typa W. and S.
Reviews the literature on this species and describes its character.

568 — Hall (C. W.) and. Eolian deposits of eastern Minnesota.
See Hall (C. W.) and Sardeson (F. W.), No. 274.

569 Schmitz (E. J.). Notes on a reconnaissance from Springfield, Mo., into Arkansas.
Describes general geologic features and occurrence of zinc ores in the region.

Describes the physiography, the occurrence of Cretaceous or Tertiary strata, and the occurrence of copper and gold.

571 — The Prince William Sound and Copper River country [Alaska].
Describes physiography of the region.

572 — and Mendenhall (W. C.). [Notes on geology of portions of Alaska.]

573 Schuchert (Charles). The fossil field’s expedition to Wyoming.
Gives an account of the expedition and the results obtained.
574 Schuchert (Charles), Clarke (John M.) and. The nomenclature of the New York series of geological formations.
See Clarke (J. M.) and Schuchert (C.), No. 101.

575 — Safford (J. M.) and. Camden chert of Tennessee and its Lower Oriskany fauna.
See Safford (J. M.) and Schuchert (Chas.), No. 559.

576 Scott (W. B.). The Selenodont Artiodactyls of the Uinta Eocene.
Describes the general features of the Uinta Basin and the characters of the material collected, and gives a summary, phylogenetic table, and references to literature.

577 Shaler (N. S.). Loess deposits of Montana.
Describes stratigraphy and age of the loess and influences affecting its formation.

578 — Formation of dikes and veins.
Describes modes of occurrence, causes of diversity, and comparison with vein fissures.

579 — Spacing of rivers with reference to hypothesis of base-leveling.
Describes erosion of small streams and torrents, and the bearing of the evidence of base leveling. Discusses hypothesis of base leveling and river spacing.

580 — [Dikes and veins.]

Describes the character and occurrence of the Juratrias rocks, the occurrence and character of the igneous rocks, and the geology of the region.

U. S. Geol. Surv., Mon. XXXIII, 402 pp., 31 pls., 30 figs., 1899.
Gives a description of the glacial history, the character and occurrence of the Carboniferous, Algonkian, and Cambrian rocks, the geologic structure, and occurrence of coal. Contains a bibliography.

583 Shimek (B.). The distribution of loess fossils.
Jour. of Geol., vol. vii, pp. 122-140, 1 fig., 1899.
Describes distribution in Mississippi Valley and gives a list of fossils collected at Council Bluffs, Iowa.
584 **Shimek** (B.). The distribution of loess fossils.

585 **Siebenthal** (C. E.). The Bedford oolitic limestone.
Describes character and occurrence in Indiana.

586 **Simonds** (Frederic W.). Recent publications relating to the
géology of Texas.
Reviews “The Lower Cretaceous Gryphæas of the Texas region” and
“Geology of the Edwards Plateau and Rio Grande Plain adjacent to
Austin and San Antonio, Texas, with reference to the occurrence of

587 — A consideration of the interpretation of unusual events in
géologic records illustrated by recent examples.

588 — [Review of “The Lower Cretaceous Gryphæas of the
Texas region,” by R. T. Hill and T. W. Vaughan.]

589 **Slichter** (C. S.). Theoretical investigations of the motion of
ground waters.
54–89, 1899.

590 **Slocum** (Charles E.). The relative ages of the Maumee Glacial
lake and the Niagara gorges.

591 **Slosson** (E. E.), **Knight** (W. C.) and. The oil fields of Crook
and Uinta counties, Wyoming.
See Knight (W. C.) and Slosson (E. E.), No. 390.

592 **Smith** (Alva J.). Fusulina cylindrica shell structure.

593 **Smith** (G. O.), **Tower** (G. W., jr.) and. Geology and mining
industry of the Tintic district, Utah.
See Tower (G. W., jr.) and Smith (G. O.), No. 632.

594 — **Willis** (B.) and. Tacoma folio, Washington.
See Willis (B.) and Smith (G. O.), No. 746.

595 **Smith** (W. S. Tangier). Some aspects of erosion in relation to
the theory of the peneplain.
Discusses objections to the theory of peneplains and a modification of
the use of the term.
BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 172.

Describes general character and occurrence of the igneous rocks.

597 Smyth (H. L.), Clements (J. M.) and. The Crystal Falls iron-bearing district of Michigan. 
See Clements (J. M.) and Smyth (H. L.), No. 105.

598 Springer (Frank). Notice of a new discovery concerning Uintacrinus. 
Am. Geol., vol. xxiv, p. 92, 1899. 
Describes peculiar features of Uintacrinus.

599 Spurr (Josiah Edward). Lakes Iliamna and Clark. The Nushagak River. The coast from Bristol Bay to the Yukon. The Kuskokwim drainage area. From the Yukon mouth to Point Barrow. The Kowak River, the Noatak River. 
Notes on routes of travel and occurrence of gold.

600 —— Geology of the Aspen mining district, Colorado. 
See Bibliography and Index for 1898, No. 739a.

Describes the physiography, the occurrence of volcanic, Juratris, and Tertiary rocks, and the occurrence of gold-bearing gravels.

Jour. of Geol., vol. vii, pp. 79-82, 1899. 
Describes evidences of glacial action in the region.

603 Stanton (Timothy W.). Mesozoic fossils [Yellowstone National Park]. 
Describes the relations of the faunas of the several horizons and the characters of the fossils collected.

604 Stearns (Robert E. C.). Description of a species of Acteon from the Quaternary bluffs at Spanish Bight, San Diego, Cal. 

605 Stevenson (John J.). Our society. 
Gives a historical sketch of the Geological Society of America and an account of the general results of several official geological surveys.

606 —— [Review of "West Virginia Geological Survey, vol. i, 1899."] 
607 Stevenson (John J.). The section at Schoharie, N. Y.
Compares the section with others of the Appalachians in Pennsylvania and Virginia.

Describes material in the museum of the University of Kansas.

609 — Pachyrhizodus minimus, a new species of fish from the Cretaceous of Kansas.
Describes material from Logan County, Kansas.

610 — Notice of three new Cretaceous fishes, with remarks on the Saurodontidae Cope.

611 — Notes on the osteology of Anogmius polymicrodus Stewart.

612 — Leptichthys, a new genus of fishes from the Cretaceous of Kansas.
Describes the genus and one species.

613 Stone (George H.). The glacial gravels of Maine and their associated deposits.
U. S. Geol. Surv., Mon. XXXIV, 499 pp., 52 pls., 36 figs., 1899.
Describes the superficial deposits and the character, distribution, classification, and genesis of the glacial gravels. Contains a discussion of the glaciation of the Rocky Mountains.

614 — Granitic breccias of Grizzly Peak, Cal.
Describes the character and origin of the breccias.

615 — Dry gold placers of the arid regions.
Describes occurrence and methods of mining.

Describes the physiographic features, character, and structure of the Carboniferous strata, and the occurrence, distribution, and character of the coals of the region.
72 BIBLIOGRAPHY AND INDEX OF N. A. GEOLOGY, [BULL. 172.

617 Taff (Joseph A.). Albertite-like asphalt in the Choctaw Nation, Indian Territory.
Describes character and occurrence of the material and the geologic features of the region.

618 — Changes in the Canadian River in western Choctaw Nation, Indian Territory.

Describes the physiographic and glacial geology of the Great Lakes region and includes a bibliography.

620 — Physical geography of New York State. Part IX. The shore lines.

621 Taylor (Frank B.). The great ice dams of Lakes Maumee, Whittlesey, and Warren.
Describes glacial phenomena in the Great Lakes region.

622 — The Galt moraine and associated drainage.

623 Teller (Edgar S.), Monroe (Charles E.) and. The fauna of the Devonian formation at Milwaukee, Wisconsin. See Monroe (C. E.) and Teller (E. E.), No. 490.

624 Todd (James Edward). The moraines of southeastern South Dakota and their attendant deposits.
Describes the occurrence and characters of the moraines, loess, and terraces of the region.

625 — New light on the drift in South Dakota.
Describes glacial deposits and their relations and fauna in South Dakota.

626 — The geology of Hubbard County and northwestern portion of Cass County [Minnesota].
Describes the glacial geology of the region.
627 Todd (James Edward). The geology of Norman and Polk counties [Minnesota].
Describes the physiography and glacial history of the county.

628 — The geology of Marshall, Roseau, and Kittson counties [Minnesota].
Describes the glacial features of the region.

629 — The geology of Beltrami County [Minnesota].
Describes the physiography and occurrence of Archean rocks and glacial deposits of the region.

630 Tolman (C. F., jr.). The carbon dioxide of the ocean and its relation to the carbon dioxide of the atmosphere.

631 — [Review of “The influence of the carbonic acid of the air upon the temperature of the ground,” by Svante Arrhenius.]

632 Tower (George Warren, jr.) and Smith (George Otis). Geology and mining industry of the Tintic district, Utah.
Describes the occurrence and character of the Cambrian and Carboniferous strata and igneous rocks, the volcanic and metamorphic phenomena, and the occurrence and origin of the ore bodies.

633 Turner (Henry W.). Granitic rocks of the Sierra Nevada.
Describes occurrence and petrographic and chemical character of biotite-granite, granodiorite, quartz-monzonite, soda-granite, and aplite.

634 — Replacement ore deposits in the Sierra Nevada.
Jour. of Geol., vol. vii, pp. 389–400, pl. v, 1899.
Describes character and occurrence of certain ore bodies in California and the petrographic character of associated rocks.

Describes general character of the materials, and gives chemical analyses.
636 Turner (Henry W.). The occurrence of roscoelite.
Describes occurrence and geologic relations of the associated rocks.

637 —— The geology of Yosemite National Park.

638 —— The occurrence and origin of diamonds in California.
Gives list of localities where diamonds have been found in California, and reviews recent literature on the origin of diamonds.

639 —— and Ransome (F. L.). Big Trees folio, California.
Describes the physiographic features, the occurrence and character of the Bed-rock and Superjacent series, which include both sedimentary and igneous rocks, and the occurrence of the auriferous gravels.

640 Tyrrell (J. Burr). Glacial phenomena in the Canadian Yukon district.
Describes glacial phenomena of the region.

641 —— Gold mining in the Klondike district [Alaska].

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642 Udden (Johan August). Geology of Muscatine County [Iowa].
Iowa Geol. Surv., vol. ix, pp. 251-380, pls. v-vii, figs. 30-40, and geologic map, 1899.
Describes the physiographic features, the character and occurrence of the Silurian, Devonian, Carboniferous, and Pleistocene subdivisions, and the occurrence of economic products.

643 —— The Sweetland Creek beds.
Jour. of Geol., vol. vii, pp. 65-78, 1899.
Gives several sections of the beds and describes their distribution, structural relations, and fauna.

644 —— Dipterus in the American Middle Devonian.
Jour. of Geol., vol. vii, pp. 494-495, 1 fig., 1899.
Describes occurrence of the Dipterus calvini Eastman in the Devonian of Iowa.

645 —— Some Cretaceous drift pebbles in northern Iowa.

646 —— Diatomaceous earth in Muscatine County [Iowa].
Brief note on occurrence.
Describes occurrence and discusses age.

Describes the physiography, occurrence of eruptive and Cretaceous rocks, and glacial history of the county.

The geology of Cass County and of the part of Crow Wing County northwest of the Mississippi River [Minnesota]. Minn. Geol. and Nat. Hist. Surv., Final Rep., vol. iv, pp. 55-81, figs. 7-8, 1899.
Describes the physiographic and geologic features and glacial history of the county.

Describes physiographic and glacial features of the region.

Discusses evidences of high elevation and late glacial depression and its termination of the Ice age.


Modified drift in the Champlain epoch. Am. Geol., vol. xxiii, pp. 319-324, 1899.
Describes occurrence, character, and classification of drift deposits.


659 **Upham (Warren).** Englacial drift in the Mississippi Basin. 
Am. Geol., vol. xxiii, pp. 369-374, 1899.
Describes occurrence and character of englacial drift in Hudson Bay and Upper Mississippi Valley regions.


661 — [Review of "Wells of northern Indiana," by Frank Leverett.]

662 — [Review of "The fossil bison of North America," by Frederick A. Lucas.]
Am. Geol., vol. xxiii, p. 385 (5 l.), 1899.


664 — Glacial history of the New England Islands, Cape Cod, and Long Island. 
Describes epeirogenic movements causing glaciation, the subsequent deformation of the region, and the character and distribution of the glacial deposits. Includes a bibliography of the subject.


666 — [Review of "Iowa Geological Survey, vol. ix"].
Am. Geol., vol. xxiv, pp. 182-184, 1899.

Am. Geol., vol. xxiv, pp. 251-253, 1899.

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669 **Van Hise (C. R.).** Introduction. [The Crystal Falls iron-bearing district of Michigan.]
Describes the general character, occurrence, structure, and correlation of the Upper and Lower Huronian series in this region.
670 Van Hise (C. R.). The naming of rocks.
Discusses criteria and proposes a plan for naming rocks.

671 Vaughan (T. Wayland). Geologic notes on the Wichita Mountains, Oklahoma, and the Arbuckle Hills, Indian Territory.
Describes the physiographic features of the region, the character and occurrence of Silurian and Carboniferous strata and igneous rocks.

672 — Some Cretaceous and Eocene corals from Jamaica.
Reviews the literature on the corals from this region, and describes material collected by R. T. Hill.

673 Veatch (Arthur C.). The Shreveport area [Louisiana].
Describes the physiography of the region and the occurrence of Tertiary deposits.

674 — The five islands [Louisiana].
Describes the topographic and geologic features of the region and the occurrence of salt.

675 — Harris (G. D.) and Veatch (A. C.).
General geology [of Louisiana].
See Harris (G. D.) and Veatch (A. C.). No. 283.

676 — Historical review [of geological literature of Louisiana].
See Harris (G. D.) and Veatch (A. C.). No. 282.

677 Vermeule (C. C.). Water supply from wells [New Jersey].
N. J. Geol. Surv., Rept. for 1898, pp. 145–182, figs. 11–20, 1899.
Describes conditions which produce flowing wells and the progress of inflow through material about a well.

678 Vogdes (A. W.). Biographical sketch of Issachar Cozzens, jr.
Gives a sketch of his life.

679 Wagner (George). On Tetracaulodon (Tetrabelodon) shepardii Cope.
Describes material from the Loup Fork beds of Kansas and reviews literature of the subject.

Gives a general review of the work undertaken by the Survey during the year 1898–99.
681 **Walcott** (Charles Doolittle). Pre-Cambrian fossiliferous formations.
Describes the character and occurrence of pre-Cambrian strata and the fossils collected.

682 — Cambrian fossils [Yellowstone National Park].
Gives a summary of the faunas and descriptions of the Cambrian fossils collected.

683 — Cambrian Brachiopoda, Obolus, and Lingulella, with description of new species.
Published in 1898.

684 — Fossil Medusae.
See Bibliography and Index for 1898. No. 844.

685 **Walker** (T. L.). Crystal symmetry of the mica group.
Describes methods of study of crystal symmetry and discusses evidence of some of the micas belonging to the triclinic system.

686 — Causes of variation in the composition of igneous rocks.

Briefly describes the material.

688 — Notice of a new meteorite from Murphy, Cherokee County, North Carolina.
Describes occurrence and character of the material.

689 — Notice of an aerolite that recently fell at Allegan, Michigan.
Describes occurrence and character of the material.

690 **Ward** (Lester F.). The Cretaceous formation of the Black Hills as indicated by the fossil plants (with the collaboration of W. P. Jenney, W. M. Fontaine, and F. H. Knowlton).
Reviews literature on the Black Hills, gives a historical sketch of the discovery of the fossils and numerous sections of the strata and descriptions of the fossils.
691 Ward (Lester F.). Descriptions of the species of Cycadeoidea or fossil Cycadean trunks thus far determined from the Lower Cretaceous rim of the Black Hills.

692 Warren (C. H.), Penfield (S. L.) and. Some new minerals from the zinc mines at Franklin, N. J., and note concerning the chemical composition of ganomalite.
See Penfield (S. L.) and Warren (C. H.), No. 522.

693 — — Chemical composition of parisite and a new occurrence of it in Ravalli Co., Montana.
See Penfield (S. L.) and Warren (C. H.), No. 521.

694 Washington (Henry S.). The petrographical province of Essex County, Massachusetts, II.
Jour. of Geol., vol. vii, pp. 53-64, 1899.
Describes the megascopic, microscopic, and chemical characters of essexite, diorite, and gabbro.

695 — The petrographical province of Essex County, Massachusetts, III.
Jour. of Geol., vol. vii, pp. 105-121, 1899.
Describes the petrographic and chemical character of aplite, quartz-syenite-porphry, paisanite, sölvsbergite, tinguaite, and dike rocks.

696 — The petrographical province of Essex County, Massachusetts, IV.
Describes petrographic and chemical character of camptonite, diabase, rhyolite, and keratophyr.

697 Petrographical province of Essex County, Massachusetts, V.
(General discussion and conclusion.)
Gives a general summary of previous papers.

698 Watson (Thomas L.). Some notes on the lakes and valleys of the Upper Nugsuak Peninsula, North Greenland.
Jour. of Geol., vol. vii, pp. 655-666, 3 figs., 1899.
Describes physiographic features of the region and the occurrence and origin of the lake.

699 — Some further notes on the weathering of diabase in the vicinity of Chatham, Virginia.
Discusses the evidences of the cause of the considerable loss of aluminia in the change from fresh to decomposed diabase. Includes many chemical analyses.

700 Watts (W. L.). Notes on the oil-yielding formations of California.
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701 Weed (Walter Harvey). Fort Benton folio, Montana.
Describes the general geologic features and the occurrence and character of the Archean, Cambrian, Silurian, Devonian, Carboniferous, Juratrias, Cretaceous, Pleistocene, and igneous rocks. Discusses the geologic history of the region, and describes the occurrence of coal, gold, and silver. Includes topographic maps and columnar sections.

702 — Little Belt Mountains folio, Montana.
Describes the physiography, the occurrence, and character of the Archean, Algonkian, Cambrian, Silurian, Devonian, Carboniferous, Juratrias, Cretaceous, metamorphic, and igneous rocks, the general geologic relations and history of the region, and the occurrence of coal, silver, and sapphires. Includes topographic and geologic maps and columnar sections.

703 — Geology of the southern end of the Snowy Range [Yellowstone National Park].
Describes the general physiographic and geologic features of the region.

704 — Granite rocks of Butte, Montana, and vicinity.
Jour. of Geol., vol. vii, pp. 737-750, 1899.
Describes occurrence and petrographic and chemical characters of the granitic rocks.

705 — Laccoliths and bysmaliths.

706 Iddings (J. and P.) Descriptive geology of the northern end of the Teton Range [Yellowstone National Park].
See Iddings (J. P.) and Weed (W. H.). No. 355.

707 — Descriptive geology of the Gallatin Mountains [Yellowstone National Park].
See Iddings (J. P.) and Weed (W. H.). No. 354.

708 Weeks (Fred Boughton). Bibliography and index of geology, paleontology, petrology, and mineralogy for 1898.
Contains list of titles of papers arranged alphabetically by authors' names and a subject index.

709 — The duplication of geologic formation names.
Gives reference to literature showing the duplication of long-established names in recent publications.

710 — [A reconnaissance in Jackson Basin, northwest Wyoming.]
711 **Weller** (Stuart). Kinderhook faunal studies, I. The fauna of the Vermicular sandstone at Northview, Webster County, Missouri.


Describes the occurrence of the formation and the character of the fossils collected.

712 [Review of “Fossil Medusae,” by C. D. Walcott.]


714 — A peculiar Devonian deposit in northeastern Illinois.

Jour. of Geol., vol. vii, pp. 483–488, 3 figs., 1899.

Describes occurrence of a Devonian fauna in crevices of Niagara strata.

715 — A century of progress in Paleontology.

Jour. of Geol., vol. vii, pp. 496–508, 1899.

Gives a general historical sketch of the development of the science of Paleontology.

716 [Review of “The Paleozoic reticulate sponges constituting the family Dictyospongidae,” by James Hall and J. M. Clarke.]


Jour. of Geol., vol. vii, pp. 638–654, 4 figs., 1899.

Describes occurrence, the associated rocks, and its megascopic and microscopic characters.

718 **Wheeler** (William Morton). George Baur’s life and writings.


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

719 **White** (David). Report on fossil plants from the McAlester coal field, Indian Territory, collected by Messrs. Taff and Richardson in 1897.


Describes the geographic distribution of the fossil plants and their occurrence in the coal beds, and compares these floras with those from the coal field of Arkansas. Includes descriptions of the species collected.

720 — Fossil flora of the Lower Coal Measures of Missouri.

U. S. Geol. Surv., Mon. XXXVII, 467 pp., 73 pls., 1899.

Describes the stratigraphy of the plant-bearing beds, the characters of the fossils collected and the relations of the faunas.

721 [Review of “Fossil plants, for students of botany and geology,” by A. C. Seward.]


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741 Williams (H. S.). Occurrence of Paleotrochis in volcanic rocks in Mexico.
   Describes material showing the origin of Paleotrochis.


743 — Devonian interval in northern Arkansas.
   Describes the fauna of a number of sections and the character and relations of the Devonian rocks of the region.

744 Willis (Bailey). The new Maryland Geological Survey.
   Reviews vol. i of the Maryland Geological Survey.


746 — and Smith (George Otis). Tacoma folio, Washington.
   Describes the general physiographic and geologic relations, geologic history, the occurrence and character of the Tertiary and Pleistocene deposits and eruptive rocks, and the occurrence of coal. Includes topographic and geologic maps and structural and columnar sections.

747 Williston (S. W.). Some additional characters of the Mosasaurs.
   Describes characters of Platecarpus.

748 — A new genus of fishes from the Niobrara Cretaceous.

749 — A new species of Sagenodus from the Kansas Coal Measures.
   Gives a list of the species of this genus and describes Sagenodus copeanus n. sp.

750 — Notes on the coraco-scapula of Eryops Cope.
   Describes material from the Red beds of Indian Territory.

751 — [Review of "West Virginia Geological Survey, vol. i."]
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752 — Prof. Benjamin F. Mudge.
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   Gives a sketch of his life and list of his publications.
753 **Williston** (S. W.) The Red beds of Kansas.
Discusses the Permian age of these beds.

754 **Willmott** (A. B.), **Coleman** (A. P.) and. Michipicoton iron range.
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Gives an outline of a portion of the nomenclature of geologic formations employed in this publication.

757 — The geology of Carlton County [Minnesota].
Describes the physiographic features and character and occurrence of the Archean and Cambrian rocks.

758 — The geology of the southern portion of St. Louis County [Minnesota].
Describes occurrence of Archean rocks and glacial deposits.

759 — The geology of the northern portion of St. Louis County [Minnesota].
Describes the character and occurrence of the Archean rocks and glacial deposits.

760 — The geology of Lake County [Minnesota].
Describes the physiographic features and the character and occurrence of Archean rocks, Cambrian sediments and igneous intrusions, and glacial history of the region.

761 — The geology of the Hibbing plate of the Mesabi Iron Range [Minnesota].
Describes the occurrence and character of the rocks associated with the iron ores.

762 — The geology of the Mountain Iron plate of the Mesabi Iron Range [Minnesota].
Describes the occurrence and character of the Cambrian rocks and occurrence of iron ores.
763 Winchell (Newton H.). The geology of the Virginia plate of the Mesabi Iron Range [Minnesota].
Describes the character and occurrence of the Archean, Cambrian, and Cretaceous rocks and iron ores of the region.

764 — The geology of the Partridge River plate of the Mesabi Iron Range [Minnesota].
Describes the character and occurrence of the Archean and Cambrian rocks of the region.

765 — The geology of the Dunka River plate of the Mesabi Iron Range [Minnesota].
Describes the occurrence of the Archean and Cambrian rocks.

766 — The geology of the Pigeon Point plate [Minnesota].
Describes the physiography and character, and occurrence of the Cambrian strata.

767 — The geology of the Vermilion Lake plate [Minnesota].
Describes the physiography and the character and occurrence of the Archean and iron-bearing rocks.

768 — The geology of the Carlton plate [Minnesota].
Describes the geology of the region and discusses the age and relations of the Thomson slates.

769 — The geology of the Duluth plate [Minnesota].
Describes the character and occurrence of the Cambrian rocks.

770 — List of rock samples, with annotations, collected by N. H. Winchell, in 1896, 1897, and 1898.

771 — Thalite and bowlingite from the north shore of Lake Superior.
Am. Geol., vol. xxiii, pp. 41–44, 1899.
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772 — Chlorastrolite and zonochlorite from Isle Royale [Michigan].
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   Describes the characters of stilbite, heulandite, laumontite, and mesotype.

.774 — The optical characters of jacksonite.
   Describes the microscopic and chemical character of the material.

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.776 — Adularia and other secondary minerals of the copper-bearing rocks.
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.779 — [Review of “Minerals in rock sections; the practical methods of identifying minerals in rock sections with the microscope; especially arranged for students in technical and scientific schools,” by L. M. Luquer.]
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.780 Winchell (H. V.) and Grant (U. S.). Preliminary report on the Rainy Lake gold region. [Minnesota.]
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   Describes the general geologic features of the region.

.782 Wolff (John E.). On hardystonite, a new calcium zinc silicate from Franklin Furnace, New Jersey.
   Describes its chemical and physical characters.
783 Wolff (John E.). Hardystonite, a new mineral from Franklin Furnace [New Jersey].

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785 —— Shore development in the Bras d’Or lakes.
Describes the forelands and discusses their classification.

786 —— Ore-bearing schists of middle and northern Cape Breton.
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Describes character and distribution.

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791 —— Shaler (N. S.), Foerste (A. F.) and. Geology of the Narragansett Basin.
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792 —— Geology of the Richmond Basin, Virginia.
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Gives data of artesian wells in New Jersey.

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_Dicyosoma_ n. sp., White, No. 719.

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_Dicyosoma_ n. sp., White, No. 720.

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_Dictyopteris_ carrii (Lx.), White, No. 719.

_Dicyopteris_ carrii (Lx.), White, No. 719.

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var. nitida n. var., Lambe, No. 413.
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Lophorhynchus haguei n. sp., Girty, No. 223.

Liostracus parvus n. sp., Walcott, No. 682.

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Lucina ozarkana Har., Harris, No. 280.

Lumulicardium Munster, Grabau, No. 229.

curtum Hall, Grabau, No. 229.

frigidum Hall, Grabau, No. 229.

Lotra rhoadsii Cope, Cope, No. 118.

Lycothrichum Milne-Edwards and Haimé, Lambe, No. 413.

affinis Billings, Lambe, No. 413.

americana Milne-Edwards and Haime, Lambe, No. 413.

curtum Hall, Grabau, No. 229.

degneplens Rominger, Lambe, No. 413.

exigua Billings (sp.), Lambe, No. 413.

superba Billings, Lambe, No. 413.

Lygodium kaulfusii Heer, Knowlton, No. 392.

Lynx calcaratus Cope, Cope, No. 118.

Lyopora Nich. and Eth. jun., Lambe, No. 413.

goldfussi Billings (sp.), Lambe, No. 413.

Lyrodictya Hall, Hall and Clarke, Nos. 275, 277.

burlingtonensis Hall (sp.), Hall and Clarke, Nos. 275, 277.

romingeri Hall, Hall and Clarke, Nos. 275, 277.

Lysactinella Girty, Hall and Clarke, Nos. 275, 276.

Machserodus Kaupp, Cope, No. 118.

Macrodon Lycett, Grabau, No 229.

hamiltonite Hall, Grabau, No. 229.

Mactra bistriata Har., Harris, No. 280.

Magnolia culveri n. sp., Knowlton, No. 392.

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microphylla n. sp., Knowlton, No. 392.

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Malapoenna lamarensis n. sp., Knowlton, No. 392.

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occidentalis n. sp., White, No. 719.

diluvianus Cope, Cope, No. 118.

involutus Cope, Cope, No. 118.

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sphenochotheca n. sp., Clarke, No. 96.

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Lucina ozarkana Har., Harris, No. 280.

Lumulicardium Munster, Grabau, No. 229.

curtum Hall, Grabau, No. 229.

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Lotra rhoadsii Cope, Cope, No. 118.

Lycothrichum Milne-Edwards and Haimé, Lambe, No. 413.

affinis Billings, Lambe, No. 413.

americana Milne-Edwards and Haime, Lambe, No. 413.

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Lygodium kaulfusii Heer, Knowlton, No. 392.

Lynx calcaratus Cope, Cope, No. 118.

Lyopora Nich. and Eth. jun., Lambe, No. 413.

goldfussi Billings (sp.), Lambe, No. 413.

Lyrodictya Hall, Hall and Clarke, Nos. 275, 277.

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Machserodus Kaupp, Cope, No. 118.

Macrodon Lycett, Grabau, No 229.

hamiltonite Hall, Grabau, No. 229.

Mactra bistriata Har., Harris, No. 280.

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hilgardiana Lx., Hollick, No. 328.

lanceolata Lx., Hollick, No. 328.

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pollardi n. sp., Knowlton, No. 392.

spectabilis n. sp., Knowlton, No. 392.

Malapoenna lamarensis n. sp., Knowlton, No. 392.

Mariopteris capitata n. sp., White, No. 719.

muricata (Schloth) Zeill., White, No. 719.

cf. nervosa (Brongn.) Zeill., White, No. 720.

occidentalis n. sp., White, No. 719.

diluvianus Cope, Cope, No. 118.

involutus Cope, Cope, No. 118.

pergracilis Con., Harris, No. 281.

planoidea Aid., Harris, No. 281.

sillimanni (Brongn.), White, No. 719.

sphenochotheca n. sp., Clarke, No. 96.

sp., Weller, No. 711.

Lucina ozarkana Har., Harris, No. 280.

Lumulicardium Munster, Grabau, No. 229.

curtum Hall, Grabau, No. 229.

frigidum Hall, Grabau, No. 229.

Lotra rhoadsii Cope, Cope, No. 118.

Lycothrichum Milne-Edwards and Haimé, Lambe, No. 413.

affinis Billings, Lambe, No. 413.

americana Milne-Edwards and Haime, Lambe, No. 413.

curtum Hall, Grabau, No. 229.

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exigua Billings (sp.), Lambe, No. 413.

superba Billings, Lambe, No. 413.

Lygodium kaulfusii Heer, Knowlton, No. 392.

Lynx calcaratus Cope, Cope, No. 118.

Lyopora Nich. and Eth. jun., Lambe, No. 413.

goldfussi Billings (sp.), Lambe, No. 413.

Lyrodictya Hall, Hall and Clarke, Nos. 275, 277.

burlingtonensis Hall (sp.), Hall and Clarke, Nos. 275, 277.

romingeri Hall, Hall and Clarke, Nos. 275, 277.

Lysactinella Girty, Hall and Clarke, Nos. 275, 276.

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Macrodon Lycett, Grabau, No 229.

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hamiltonite Hall, Grabau, No. 229.

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Macon philadelphicus n. sp., Harris, No. 281.

Mactra bistriata Har., Harris, No. 280.

Magnolia culveri n. sp. Knowlton, No. 392.

hilgardiana Lx., Hollick, No. 328.

lanceolata Lx., Hollick, No. 328.

microphylla n. sp., Knowlton, No. 392.

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Mariopteris capitata n. sp., White, No. 719.

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cf. nervosa (Brongn.) Zeill., White, No. 720.

occidentalis n. sp., White, No. 719.

diluvianus Cope, Cope, No. 118.

involutus Cope, Cope, No. 118.

pergracilis Con., Harris, No. 281.

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sphenochotheca n. sp., Clarke, No. 96.
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amplectens n. sp., Grabau, No. 229.

fructicosa (Hall), Grabau, No. 229.

(?) furcata (Hall), Grabau, No. 229.

Moorea Jones and Kirby, Grabau, No. 229.

bicornuta Ulrich, Grabau, No. 229.

Mourlonia northviewensis n.s'p., Weller, No. 711.

Multicolumnastrsea n. gen., Vaughan, No. 672.

cyathiformis (Duncan), Vaughan, No. 672.

Murchisonia marcouiana Geinitz, Girty, No. 222.

Muricidea imbricatula, Harris, No. 281.

Musophyllum complicatum Lx., Knowlton, No. 392.

Mustela diluviana Cope, Cope, No. 118.

Myalina? exasperata n. sp., Beede, No. 44.

Myliobatis leidyi, Hay, No. 286.

Mylodon ? harlanii Owen, Cope, No. 118.

Mylohyus Cope, Cope, No. 118.

nasutus Leidy, Cope, No. 118.

pennsylvanicus Leidy, Cope, No. 118.

tetragonus Cope, Cope, No. 118.

Myrica bolanderi ? Lx., Knowlton, No. 392.

lamarensis n. sp., Knowlton, No. 392.

wardii n. sp., Knowlton, No. 392.

Nageiopsis angustifolia Fontaine ?, Fontaine, No. 188.

longifolia Fontaine, Fontaine, No. 188.

Nassa cancellata Lea, Harris, No. 281.

terebrata Harris, No. 280, 281.

eminula Har. var., Harris, No. 281.

magno-umbilicata Lea, Harris, No. 281.

(Neverita) onusta Whitf., Harris, No. 281.

(Lacunaria) alabamiensis Whitf., Harris, No. 281.

crustata Whitf., Harris, No. 281.

semilunata, Harris, No. 281.

(Nigatius) clarkeana Ald., Harris, No. 281.

Natoposis (?) sp., Girty, No. 223.

Nautilus Breynius, Grabau, No. 229.

magister Hall, Grabau, No. 229.

(Centrocena) marcellensis (Vanuxem), Grabau, No. 229.

Neilus quinquecostata? (Sow.) Mort., Harris, No. 280.

Neritina wyomingensis n. sp., Stahton, No. 603.

Paleontology—Continued.

Genus and species described—Continued.

Nuderopteris Brongniart, 1822, White, No. 720.
caudata D. W., White, No. 719.
dilatata (L. and H.) Lx., White, No. 720.
griffithii Lx., White, No. 719.
harris n. sp., White, No. 719.
jenneyi D. W., White, No. 719.
missouriensis Lx., White, Nos. 719, 720.
var. nervosa n. var., White, No. 719.
scheuchzeri Hoffm., White, Nos. 719, 720.
Niso umbilicata Lea, Harris, No. 281.
Nucelopsis Hall, Grabau, No. 229.
concina Hall, Grabau, No. 229.
Nucula Lamareck, Grabau, No. 229.
corbuliformis Hall, Grabau, No. 229.
pulchella n. sp., Beede and Rogers, No. 46.
Nuculana.artata (Hall), Girty, No. 222.
Nuculites Conrad, Grabau, No. 229.
yassa Hall, Grabau, No. 229.
olobongatus Hall, Grabau, No. 229.
tryqueter Conrad, Grabau, No. 229.
Nycitops Nicholson, Lambe, No. 413.
billingi Nicholson, Lambe, No. 413.
Obolella gamagei n. sp., Hobbs, No. 330.
loperi n. sp., Walcott, No. 683.
mickwiti n. sp., Walcott, No. 683.
majonnae n. sp., Walcott, No. 683.
pandemia n. sp., Walcott, No. 683.
threa n. sp., Walcott, No. 683.
Oboius Eichwald, Walcott, No. 683.
anceps n. sp., Walcott, No. 683.
(Lingulella) argutus n. sp., Walcott, No. 683.
anga n. sp., Walcott, No. 683.
bellus n. sp., Walcott, No. 683.
bellutus n. sp., Walcott, No. 683.
desideratus n. sp., Walcott, No. 683.
dubius n. sp., Walcott, No. 683.
ellis n. sp., Walcott, No. 683.
euglyphus n. sp., Walcott, No. 683.
franklinensis n. sp., Walcott, No. 683.
hexas n. sp., Walcott, No. 683.
helenana n. sp., Walcott, No. 683.
ilo n. sp., Walcott, No. 683.
lamberti var. minimus n. var., Walcott, No. 683.
leos n. sp., Walcott, No. 683.
lineolatus n. sp., Walcott, No. 683.
mosa var. osceola n. var., Walcott, No. 683.
nanno n. sp., Walcott, No. 683.
oweni n. sp., Walcott, No. 683.
phaon n. sp., Walcott, No. 683.
pogonipensis n. sp., Walcott, No. 683.
prindlei n. sp., Walcott, No. 683.
punctatus n. sp., Walcott, No. 683.
rogersi n. sp., Walcott, No. 683.
rotundatus n. sp., Walcott, No. 683.
similis n. sp., Walcott, No. 683.
sinec n. sp., Walcott, No. 683.
tarpa n. sp., Walcott, No. 683.
willid n. sp., Walcott, No. 683.
zelus n. sp., Walcott, No. 683.
(Lingulella) Hall, Walcott, No. 682.
acuminatus var. meeki, Walcott, No. 682.
Paleontology—Continued.

Genera and species described—Continued.

Odontoperis ? bradleyi Lx., White, No. 720.

Oligocarpia cf. gutbieri Goepp, White, No. 720.

missouriensis n. sp., White, No. 720.

Oligoporus ? minutus n. sp., Beede, No. 44.

Olivella mediavia, Harris, No. 281.

Omphalophloios cyclostigma (Lx.) D. W., White, No. 720.

Omphyma eriphyle Billings sp., Lambe, No. 414.

Onoclea minima-n. sp., Knowlton, No. 392.

Oppelia ? sp. Stanton, No. 603.

Orbiculoidea d'Orbigny, Grabau, No. 229.

doria Hall, Grabau, No. 229.

lodiensis Vanuxem, Grabau, No. 229.

media Hall, Grabau, No. 229.

(?) Oromeryx Marsh, Scott, No. 576.

Orthis ? remnicha Winchell, Walcott, No. 682.

Orthoceras Breynius, Grabau, No. 229.

aulax Hall, Grabau, No. 229.

chemungense Swallow, Weller, No. 711.

constrictum Vanuxem, Grabau, No. 229.

eecutatum Hall, Grabau, No. 229.

eriense Hall, Grabau, No. 229.

extre Hall, Grabau, No. 229.

nuntium Hall, Grabau, No. 229.

rude Hall, Girty, No. 222.

subulatum Hall, Grabau, No. 229.

Orthoceras Conrad, Grabau, No. 229.

(?) parvula Hall, Grabau, No. 229.

Orthosthropia strophomenoides Hall, Girty, No. 222.

Parabatrachus, Hay, No. 286.

Paracyclas Hall, Grabau, No. 229.

amplexans Hall, Grabau, No. 229.

intercella Hall, Grabau, No. 229.

Paleschara Hall, Grabau, No. 229.

amplexans Hall, Grabau, No. 229.

Paloza Hall, Grabau, No. 229.

oreopteridia (Schloth.) Brongn., White, No. 719.

borealis Brongn., Fontaine, No. 188.

clintoni Lx., White, No. 720.

dentata Brongn. (non Will.), White, No. 719.

geyleriana Nathorst, Fontaine, No. 188.

jenneyi n. sp., White, No. 719.

lesquereuxi D. W., White, No. 719.

oreopteridia (Schloth.) Stb., White, No. 719.

pseudovestita n. sp., White, No. 719.

richardsoni n. sp., White, No. 719.

squamosa Lx., White, No. 720.

vestita Lx., White, No. 720.

var. minor n. var., White, No. 719.

(Asterotheca) hemiteiloidea Brongn., White, No. 720.

(Asterotheca) squamosa Lx., White, No. 719.

(Dactylotheca) dentata Brongn., (non Will.), White, No. 720.

Dactylotheca) dentata Brongn. (non Will.), White, No. 720.

Paleschara Hall, Grabau, No. 229.

Panopecten cooperensis (Shumard), Weller, No. 711.

Phaneropithes angelin, Grabau, No. 229.

Phanerothus paradoxus Winchell, Weller, No. 711.

Pheline alabamensis Ald., Harris, No. 281.
Paleontology—Continued.
Genera and species described—Continued.

Phillipsea californica Calvin, Lambe, No. 414.

Verneuil Milne-Edwards and Haime, Lambe, No. 414.

Pholadella Hall, Grabau, No. 229.

Radiata (Conrad), Grabau, No. 229.

Pholadomya inequivalvata n. sp., Stanton, No. 603.

Kingi Meek, Stanton, No. 603.

Pholas alatoideus, Harris, No. 280.

Pholadomya inequivalvata n. sp., Stanton, No. 603.

Pholadomya crebristriata Hall, Hall and Clarke, Nos. 275, 277.

(? ) Patelliformis Hall, Hall and Clarke, Nos. 275, 277.

Phyllites crassaformis Hall, Knowlton, No. 392.

Phyllonotus morulus Harris, No. 281.

Phynchostegium knowltoni, n. sp., Britton, No. 65.

Physospongia Hall, Hall and Clarke, Nos. 276, 277.

Phyllites crassifolia n. sp., Knowlton, No. 392.

Pinna peracuta Shumard, Girty, No. 222.

Pinus gracilistrobus n. sp., Knowlton, No. 392.

Planolites corrugatus n. sp., Walcott, No. 681.

Plastromorpha Milne-Edwards and Haime 1849, Lambe, No. 413.

Platanicium haydeni Felix, Knowlton, No. 392.

Platecarpus, Williston, No. 747.

Platyceras Conrad, Girty, No. 223.

Platycrinus Miller, Grabau, No. 229.

Platyctenium de France, Grabau, No. 229.

Platycrinus Miller, Grabau, No. 229.

Platycrinus Miller, Grabau, No. 229.

Platycrinus Miller, Grabau, No. 229.

Plethusa oviformis (Conrad), Grabau, No. 229.

Pleurodictyum Goldfuss, Grabau, No. 229.

Pleurodictyum Goldfuss, Grabau, No. 229.

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Pleurodictyum Goldfuss, Grabau, No. 229.

Pleurodictyum Goldfuss, Grabau, No. 229.
Paleontology—Continued.

Genera and species described—Continued.

Polygnathus Hinde, Grabau, No. 229.
crassus Hinde, Grabau, No. 229.
cristatus Hinde, Grabau, No. 229.
dubius Hinde, Grabau, No. 229.
linguiformis Hinde, Grabau, No. 229.
nasutus Hinde, Grabau, No. 229.
palmatus Hinde, Grabau, No. 229.
pennatus Hinde, Grabau, No. 229.
princeps Hinde, Grabau, No. 229.
punctatus Hinde, Grabau, No. 229.
solidus Hinde, Grabau, No. 229.
truncatus Hinde, Grabau, No. 229.
tuberculatus Hinde, Grabau, No. 229.
(?) simplex Hinde, Grabau, No. 229.

Polygyra caloosaensis n. sp., Johnson, No. 361.

Polypora McCoy, Grabau, No. 229.
multiplex Hall, Grabau, No. 229.

Polypsephis, Hay, No. 286.

Populus balsamoides Goepp, Knowlton, No. 392.
daphnogenoides Ward, Knowlton, No. 392.
glandulifera Heer, Knowlton, No. 392.
speciosa Ward, Knowlton, No. 392.
(?) vivaria n. sp., Knowlton, No. 392.
xantholithensis n. sp., Knowlton, No. 392.

Porcellia cf., P. rectinoda Win., Weller, No. 711.

Porites reussiana Duncan, Vaughan, No. 672.

Pseudoionyma? spertenuis n. sp., Beede, No. 44.

Primitia Jones and Hall, Grabau, No. 229.
pyriformis n. sp., Matthew, No. 468.

Primitiopsis Jones, Grabau, No. 229.
punctulifera (Hall), Grabau, No. 229.

Prioniodus Pander, Grabau, No. 229.
abbreviatatus Hinde, Grabau, No. 229.
acicularis Hinde, Grabau, No. 229.
(?) alatus Hinde, Grabau, No. 229.
angulatus Hinde, Grabau, No. 229.
armatus, Hinde, Grabau, No. 229.
clavatus Hinde, Grabau, No. 229.
eraticus Hinde, Grabau, No. 229.
panderi Hinde, Grabau, No. 229.

Prionotropis woolgari Meek, Logan, No. 438.

Prismodictya choanæ is Hinde, Grabau, No. 229.
cithara n. sp., Hall and Clarke, Nos. 275, 276.
conradi Hall (sp.), Hall and Clarke, Nos. 275, 276.
corynia n. sp., Hall and Clarke, Nos. 275, 276.
filtriformis Hall (sp.), Hall and Clarke, Nos. 275, 276.
narthecia n. sp., Hall and Clarke, Nos. 275, 276.
palea n. sp., Hall and Clarke, Nos. 275, 276.
parallela Hall (sp.), Hall and Clarke, Nos. 275, 276.
prismatica Hall (sp.), Hall and Clarke, Nos. 275, 276.
polygonia n. sp., Hall and Clarke, Nos. 275, 276.
spectabilis n. sp., Hall and Clarke, Nos. 275, 276.
telum Hall (sp.), Hall and Clarke, Nos. 275, 276.

Productella Hall, Grabau, No. 229.

Productus burlingtonensis Hall?, Girty, No. 222.
gallatinensis n. sp., Girty, No. 223.
levicosta White, Girty, No. 223.
parviformis n. sp., Girty, No. 223.
semireticulatus Martin, Girty, No. 223.

Proetus Steininger, Grabau, No. 229.
curvimarginatus Hall, Grabau, No. 229.
loganensis Hall and Whithfield, Girty, No. 223.
macrocephalus Hall, Grabau, No. 229.
perocidens Hall and Whithfield, Girty, No. 223.
protuderans Hall, Girty, No. 222.
rowi (Green), Grabau, No. 229.

Promacrus cuneatus Hall, Weller, No. 711.
websterensis n. sp., Weller, No. 711.

Protagraules priscus Matt., Matthew, No. 468.
Protagriochoerus n. gen., Scott, No. 576.
Protanilus Milne-Edwards and Haime, Lavanbe, No. 413.

Protactina alida Hall, Lambe, No. 413.

Protosiphon kempanum Matt., Matthew, No. 468.

Protospyrsena gigas n. sp., Stewart, No. 610.
Paleontology—Continued.

Genera and species described—Continued.

Protoctopteris Lx., White, No. 720.

obtusiloba (Brengr.) Lx., White, No. 720.
squamosa Lx. sp., White, No. 720.

Pseudoliva scalina Heilp., Harris, No. 281.
tuberculifera Con., Harris, No. 281.

Pseudomonotis (?) cf. hawni Meek, Beede, No. 43.

Pseudoperna n. gen., Logan, No. 440.

Pterinea Goldfuss, Grabau, No. 229.

Pterinopecten Hall, Grabau, No. 229.

Ptychoceras near crassum, Harris, No. 280.


Ptychoparia (E.) affinis Walcott, Walcott, No. 682.

Pycnodus phaseolus, Hay, No. 286.
Paleontology—Continued.

Genera and species described—Continued.

Salix varians Heer, Knowlton, No. 392.
Sapindopsis variabilis Fontaine, Pontaine, No. 188.
Sapiudus affinis Newby, Knowlton, No. 392.
Sapotacites americanus Lx., Hollick, No. 328.
Sassafras mudgii Lx., Ward, No. 690.
Saurocephalus lanciformis, Hay, Nos. 288, 293.
Scaula, Harris, No. 281.
Sipho iuomeyi Aid., Harris, No. 281.
Siphonalia subsclarina Heilp., Harris, No. 281.
Splantites sylvserupis n. sp., Harris, No. 281.
Sphagnetum kurriann-(Dunker) Heer, Fontaine, No. 188.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris taffii n. sp., White, No. 719.
Sphenophyllum cuneiform (Stb.) Zeill., White, No. 720.
Smilodon mercerii Cope, Cope, No. 118.
Solariella louisiana Ball., Harris, No. 281.
Solenomya parallela n. sp., Beede and Rogers, No. 46.
Solenopora 7 veedi, Walcott, No. 682.
Sphenophyllum cuneiform (Stb.) Zeill., White, No. 720.
Somphospongia n. gen., Beede, No. 44.
Sphenopila cupola Heilp., Harris, No. 281.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Sphenopteris brittisi Lx., White, No. 720.
Paleontology—Continued.

Genera and species described—Continued.

Spirifer—Continued.

centronatus Winchell, Girty, No. 223.
var. semifurcatus n. var., Girty, No. 223.
consohrinus d'Orbigny, Grabau, No. 229.
engelmanni Meek, Girty, No. 223.
granulosus (Conrad), Grabau, No. 229.
var. clintoni Hall, Grabau, No. 229.
consobrinus d'Orbigny, Grabau, No. 229.
engelmanni Meek, Girty, No. 223.
granulosus (Conrad), Grabau, No. 229.
var. clintoni Hall, Grabau, No. 229.
macronotus Hall, Grabau, No. 229.
marionensis Shumard, Weller, No. 711.
mucronatus Conrad, Grabau, No. 229.
rockymontanus Marcou, Girty, No. 222.
subattenuatus Hall, Girty, No. 223.
tullius Hall, Grabau, No. 229.
(Delthyris) sculptilis (Hall), Grabau, No. 229.
(Martinia) subumbonus Hall, Grabau, No. 229.
(Reticularia) flmbriatus (Conrad), Grabau, No. 229.
sp. Girty, No. 223.
Spiriferina solidirostris White, Girty, No. 223.
Spirophyton sp., Weller, No. 711.
Spirorbis Lamarck, Grabau, No. 229.
angulatus Hall, Grabau, No. 229.
Stearoceras gibbosum Hyatt, Girty, No. 222.
Steganoblastus canadensis, White, No. 725.
Stemmatia bicristatus, Hay, No. 286.
bifurcatus, Hay, No. 286.
cheiriformis, Hay, No. 286.
compactus, Hay, No. 286.
keokuk, Hay, No. 286.
symmetricus, Hay, No. 286.
Stiboriopsis n. gen., Vaughan, No. 672.
jamaicaensis n. sp., Vaughan, No. 672.
Stictopora Hall, Grabau, No. 229.
palmipes Hall, Grabau, No. 229.
permarginata Hall, Grabau, No. 229.
recta Hall, Grabau, No. 229.
sinuosa Hall, Grabau, No. 229.
Stictoporella (?) sp., Girty, No. 223.
Stigmaria evenii L., White, No. 720.
verrucosa .(Martin) S. A. Miller, White, No. 720.
Straparollus Montfort, Grabau, No. 229.
rudis Hall, Grabau, No. 229.
uthensis Hall and Whitfield, Girty, No. 223.
? sp., Weller, No. 711.
Strblotrypa Ulrich, Grabau, No. 229.
hamiltonense (Nicholson), Grabau, No. 229.
Streptelasma Hall, Grabau, No. 229.
rectum, Hall, Grabau, No. 229.
unglea (Safford), White, No. 222.
Strepsula Jones and Hall, Grabau, No. 229.
sigmodaldis Jones, Grabau, No. 229.
Striatopora Hall, Lambe, No. 413.
flexuosa Hall, Lambe, No. 413.
ilnneaana Billings, Lambe, No. 413.
Paleontology—Continued.

Genera and species described—Continued.

Tentaculites Schlotheim, Grabau, No. 229.
bellulus Hall, Grabau, No. 229.
gracilistriatus Hall, Grabau, No. 229.
Terebratulina sp., Harris, No. 280.
Terebrifusus amoanus Con., Harris, No. 281.
Testudo gilbertii, Hay, No. 289.
Tetracaulodon (Tetrabelodon) shephardii Cope, Wagner, No. 679.
Tetradium Dana, Lambe, No. 413.
flbratum SafTord, Larabe, No. 413.
Tetranthera propiciirsoria Lx., Hollick, No. 328.
Thamnodictya Hall, Hall and Clarke, Nos. 275, 277.
newberryi Hall, Hall and Clarke, Nos. 275, 277.
Thysanodictya n.gen., Hall and Clarke, Nos. 275, 276, 277.
apleta n. sp., Hall and Clarke, Nos. 275, 276.
hermentia n. sp., Hall and Clarke, Nos. 275, 276.
johnstoni n. sp., Hall and Clarke, Nos. 275, 276.
podidens n. sp., Hall and Clarke, Nos. 275, 276.
quasillum n. sp., Hall and Clarke, Nos. 275, 276.
randalli Hall (sp.), Clarke, Nos. 275, 276.
saccus n. sp., Hall and Clarke, Nos. 275, 276.
scephon n. sp., Hall and Clarke, Nos. 275, 276.
turricula n. sp., Hall and Clarke, Nos. 275, 276.

Titanophyllum brittsii n. sp., White, No. 720.
Tornatellaca bella Con., Harris, No. 281.
Tornatina leai Aid., Harris, No. 281.
Tornoceras Hyatt, Clarke, No. 96.
bicostatum Hall (sp.), Clarke, No. 96.
peracutum Hall (sp.), Clarke, No. 96.
rhyssum n. sp., Clarke, No. 96.
uniangulare Conrad (sp.), Clarke, No. 96.
var. compressum n.var., Clarke, No. 96.
var. obesum n.var., Clarke, No. 96.
Toxaspis anguillulatus Cope, Cope, No. 118.
Toryton longipelilotatum n. sp., Hollick, No. 328.

Paleontology—Continued.

Genera and species described—Continued.

Trapa microphylla Lx., Knowlton, No. 392.
Trematospira Hall, Grabau, No. 229.
gibbosa, Grabau, No. 229.

(Evans?) Girty, No. 222.
Triloboceras digonum (M. and W.)?, Weller, No. 711.
Trigelia Bayle, Grabau, No. 229.

Ulmiphyllum densinerve n. sp., Fontaine, No. 188.
tenuinervis, Hollick, No. 328.
Umbrella sylveterupis n. sp., Harris, No. 281.
Utea hastata Con., Harris, No. 281.

Venericardia plaiiicosta, Harris, No. 280.
Veniella sp., Harris, No. 280.
Viburnites evansanus Ward, Ward, No. 690.
Paleontology—Continued:

Genera and species described—Continued.

Viburnum rotundifolium Lx, Knowlton, No. 392.
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