DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
CHARLES D. WALCOTT, DIRECTOR

BIBLIOGRAPHY AND INDEX
OF
NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY
AND MINERALOGY
FOR
THE YEAR 1901
BY
FRED BOUGHTON WEEKS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1902
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., July 22, 1902.

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 1901, and to request that it be published as a Bulletin of the Survey.

Yours respectfully,

F. B. Weeks.

Hon. Charles D. Walcott,
Director United States Geological Survey.
INTRODUCTION.

The preparation and arrangement of the material of the Bibliography and Index for 1901 is similar to that adopted for the previous publications (Bulletins Nos. 130, 135, 146, 149, 156, 162, 172, 188, and 189). 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, arranged alphabetically by authors' names, an abbreviated reference to the publication in which the paper is printed, and a brief description of the contents, each paper being numbered for index reference.

Index.—The subject headings, their subdivisions and arrangement, are shown in the classified key to the index, which immediately precedes the index. Reference is made in each entry by author's name and number of article in the Bibliography.
LIST OF PUBLICATIONS EXAMINED.

American Association for the Advancement of Science: Proceedings, Vol. L, 1901.
American Geologist, Vols. XXVII and XXVIII, 1901. Minneapolis, Minn.
American Journal of Science: 4th series, Vols. XI and XII, 1901. New Haven, Conn.
Canadian Mining Review, Vol. XX, 1901. Ottawa, Canada.
Canadian Record of Science, Vol. VIII, Nos. 5-6, 1901. Montreal, Canada.
Cincinnati Society of Natural History: Journal, Vol. XX, No. 1, 1901. Cincinnati, Ohio.
Elisha Mitchell Scientific Society: Journal, 17th year, Part 1, 1900; 17th year, Part II, 1901. Chapel Hill, N. C.
LIST OF PUBLICATIONS EXAMINED.

Engineering and Mining Journal, Vols. LXXI and LXXII, 1901. New York, N. Y.


Indiana Academy of Science: Proceedings for 1900. 1901. Indianapolis, Ind.

Indiana, Department of Geology and Natural Resources: 25th Annual Report, 1901. Indianapolis, Ind.


Iowa State University, Laboratory of Natural History: Bulletin, Vol. V, No. 2, 1901. Iowa City, Iowa.


Neues Jahrbuch für Mineralogie, Geologie und Paleontologie (except abstracts): Band I, Hefte 1-3; Band II, Hefte 1-3; Beilage-Band XIV, Heft 3, 1901. Berlin, Germany.
LIST OF PUBLICATIONS EXAMINED.


Ottawa Naturalist, Vol. XIV, Nos. 10 and 12; Vol. XV, Nos. 1–9 (except No. 3), 1901. Ottawa, Canada.

Paleontographica, Band XLVII, Hefte 1–4, 1900, and Band XLVIII, Hefte 1–3, 1901. Stuttgart, Germany.


Popular Science Monthly, Vol. LVIII, Nos. 3–6; Vol. LIX; Vol. LX, Nos. 1, 2, 1901. New York, N. Y.


St. Louis Academy of Science, Transactions, Vol. XI, 1901. St. Louis, Mo.

School of Mines Quarterly, Vol. XXII, Nos. 2–4, and Vol. XXIII, No. 1, 1901. New York, N. Y.

Science, New Series, Vols. 13, 14, 1901. New York, N. Y.

Scientific American, Vols. LXXXIV, LXXXV, 1901. New York, N. Y.


Stone, Vols. XXII and XXIII, 1901. New York, N. Y.


The Plant World, Vol. IV, 1901. Binghamton, N. Y.


Experiment Station: Bulletin, No. 49, 1901. Laramie, Wyo.

Yale University: Bicentennial Publications; Mineralogy and Petrology, edited by S. L. Penfield and L. V. Pirsson; Studies in evolution, mainly reprints of occasional papers selected from publications of the laboratory of invertebrate paleontology, Peabody Museum, Yale University, by Charles Emerson Beecher.


BIBLIOGRAPHY.

A.

1 Abbe (Cleveland). The physiographic features of Maryland.
   Am. Bur. Geog., vol. 1, 1900. (Not seen.)

2 Adams (Charles C.). Baseleveling and its faunal significance, with
   illustrations from southeastern United States.
   Science, new ser., vol. 13, p. 373, 1901.
   Describes the process of baseleveling and its influence on the distribution of faunas.
   Includes a bibliography.

3 Adams (Frank D.). George M. Dawson.
   Gives an account of his life and work.

4 — Experimental work on flow of rocks.

   (Not seen.)
   Abstract: Am. Geol., vol. 27, p. 316, 1901.

6 Adams (George L.). The Carboniferous and Permian age of the
   Red Beds of eastern Oklahoma from stratigraphic evidence.
   Describes the extension of these beds from Kansas into Oklahoma and discusses the evidence as to their age.

7 — Oil and gas fields of the western interior and northern Texas
   Coal Measures, and of the Upper Cretaceous and Tertiary
   of the Western Gulf Coast.
   Describes the general geology of the oil and gas fields of Kansas and Indian Territory, and the developments of the various localities.
   Describes the stratigraphy of the Texas oil fields and their developments.

8 Aguilera (J. G.). Distribucion geografica y geologica de los criaderos minerales de la Republica Mexicana.
   A. Ac. d. Cienc. exact fis. y Nat. Mexico, 57 pp., 1901. (Not seen.)
10 Aldrich (T. H.). A Texas oil well fossil.
Nautilus, vol. 15, p. 74, 2 figs., 1901.
Describes material from Beaumont, Texas.

11 Allen (O. S.) and Comstock (W. J.). Bastnasite and tysonite from Colorado.

12 Ami (Henry M.). Description of tracks from the fine-grained siliceous mud stones of the Knöydart formation (Eo-Devonian) of Antigonish County, Nova Scotia.

13 Preliminary lists of the organic remains occurring in the various geological formations comprised in the map of the Ottawa district, including portions of the provinces of Quebec and Ontario along the Ottawa River.

14 On the geology of the principal cities in eastern Canada.
Describes the local geology in the vicinity of several cities.

15 Synopsis of the geology of Canada. (Being a summary of the principal terms employed in Canadian geological nomenclature.)

16 On a new or hitherto unrecognized geological formation in the Devonian system of Canada.
Describes the lithologic and faunal characters of the Knöydart formation in Nova Scotia.

17 Addenda and corrigendum to “Progress of geological work in Canada during 1899.”

18 The late George Mercer Dawson.
Gives a sketch of his life and work.

19 Bibliography of Dr. George Mercer Dawson.

20 Knöydart formation of Nova Scotia.
Describes the lithologic and faunal characters of a Devonian formation.
21 **Ami** (Henry M.). The Knoydart formation in Nova Scotia—a bit of the old Red sandstone of Europe.


22 — Stratigraphical note.


Contains brief notes on Devonian and Silurian subdivisions in Nova Scotia.

23 — [Review of “General Index to the Reports of Progress, 1863 to 1884,” by D. B. Dowling.]


24 — The Royal Society of Canada (twentieth meeting).


Contains abstracts of papers read.

25 — Notes on some of the Silurian and Devonian formations of eastern Canada, and their faunas and floras.


26 — On the subdivisions of the Cambrian system in Canada.


Paper read before the Royal Society of Canada.

27 — A dual classification required in the nomenclature of the geological formations in different systems in Canada.


Paper read before the Royal Society of Canada.

28 — Brief biographical sketch of Elkanah Billings.

*Am. Geol.*, vol. 27, pp. 265-281, 1901.

Gives a brief account of the life and work of Billings and a chronologic list of his publications.

29 — Bibliography of Dr. George M. Dawson.

*Am. Geol.*, vol. 28, pp. 76-86, 1901.

30 — Bibliography of E. Billings.


Gives five additional references to the Bibliography of Billings heretofore published.

31 **Anderson** (F. M.). The Neocene basins of the Klamath Mountains [California].


Brief notes on the structural features of the range.

32 **Ashley** (George H.), **Blatchley** (W. S.) and. The lakes of northern Indiana and their associated marl deposits.

See Blatchley (W. S.) and Ashley (G. H.), 69.

33 **Askwith** (W. R.). The West Gore antimony deposits [Nova Scotia].


Describes the character and occurrence of the ore body.
B.


44 Barton (George H.). Outline of elementary lithology Boston, 112 pp., 1901. (Not seen.)

45 Bartsch (Paul), Dall (W. H.) and. A new Californian Bittium. See Dall (W. H.) and Bartsch (Paul), 189.


56 Beede (J. W.). The age of the Kansas-Oklahoma red beds.
   Am. Geol., vol. 28, pp. 46-47, 1901.
   Describes the occurrence of fossils recently found, indicating the Per-
   mian age of the beds.

57 Bell (Robert). Report on an exploration of the northern side of
   Hudson Strait [Canada].
   map. 1901.
   Contains notes on the physiographic features and ancient gneisses and
   limestones and Silurian strata of the region.

58 — Laurentian limestones of Baffinland.
   Science, new ser., vol. 13, p. 100, 1901.

59 Bell (W. T.). The remarkable concretions of Ottawa County,
   Kansas.
   Describes the occurrence of concretionary masses of crystalline lime-
   stone, most of them in place.

60 Biddle (H. C.). The deposition of copper by solutions of ferrous
   salts.
   Jour. Geol., vol. 9, pp. 430-436, 1901.
   Describes certain chemical experiments which show that the condi-
   tions under which the oxidation of the ferrous salts may result in the
   deposition of copper are those which are found in the circulation of
   underground water.

61 Bishop (S. E.). Brevity of tuff-cone eruptions.
   Am. Geol., vol. 27, pp. 1-5, pl. i, 1901.
   Discusses the origin and mode of formation of Diamond Head, Island
   of Oahu.

62 Blake (William P.). Some salient features in the geology of
   Arizona, with evidences of shallow seas in Paleozoic time.
   Describes the general character and occurrence of ancient crystalline
   Paleozoic and Mesozoic rocks in Arizona.

63 —— The evidences of shallow seas in Paleozoic time in southern
   Arizona.
   Abstract: Jour. Geol., vol. 9, pp. 68-69, 1901; Geol. Soc. Am., Bull.,
   vol. 12, p. 493, 1901.
   Contains notes on probable lower Paleozoic rocks of the region.

64 —— The caliche of southern Arizona.
   Describes the character and origin of the material.

65 Blakemore (William). Pioneer work in the Crows Nest coal
   areas [Canada].
   vol. 4, pp. 230-243, 3 figs., 1901.
   Describes the occurrence of the coal in Cretaceous strata.
66 Blasdale (Walter C.). Contribution to the mineralogy of California.
Univ. of Cal., Dept. of Geol., Bull., vol. 2, pp. 327-348, 1901.
Describes material from the Berkeley Hills, Cal.

67 Blatchley (W. S.). Oolite and oolitic stone for Portland cement manufacture.
Describes the occurrence and characters of the materials in Indiana.

68 —— The petroleum industry in Indiana in 1900.
Discusses the origin of petroleum oil and contains notes on its occurrence in Indiana.

69 —— and Ashley (George H.). The lakes of northern Indiana and their associated marl deposits.
Describes the characteristics and origin of these lakes and the occurrence, formation, and uses of the marl beds.

70 Bibbins (A. W.). Occurrence of zoisite and thulite near Baltimore [Maryland].
From notes by the late John W. Lee.

71 Bishop (Irving P.). Oil and gas in southwestern New York.
Describes occurrence of oil, and gives sections at a number of localities.

72 Böse (Emil). Ein Profil durch den Ostabfall der Sierra Madre Oriental von Mexico.
Describes the character of the igneous and sedimentary rocks and the geologic structure of the region.

73 Bownocker (J. A.). The Corning oil and gas field.
Ohio Nat., vol. 1, pp. 49-59, Feb., 1901. (Not seen.)

Jour. Geol., vol. 9, p. 91 (½ p.), 1901.

75 —— [Review of "Géologie et minéralogie appliquées. Les minéraux et leur gisements," by Henri Charpentier.]
Jour. Geol., vol. 9, pp. 198-199, 1901.

76 —— Origin of ripple marks.
Jour. Geol., vol. 9, pp. 535-536, 1901.
Suggests that the origin of large ripple marks may be found in the seaward extension of beach cusps.

78 Broadhead (Garland C.). History of geological surveys in Missouri. Encyclopedia History of Missouri, pp. 27-31, 1901. (Not seen.)

79 —— Geology (and) Mineralogy (Missouri). Encyclopedia History of Missouri, pp. 31, and 390-393, 1901. (Not seen.)


82 —— Schrader (F. C.) and. Some notes on the Nome gold region of Alaska. See Schrader (F. C.) and Brooks (A. H.), 681.


89 **Brush** (George J.) and **Dana** (Edward S.). Second Branchville paper.

90 — — — Third Branchville paper.

91 — — — Fourth Branchville paper—Spodumene and the results of its alteration.

92 — — — Fifth Branchville paper, with analyses of several manganesian phosphates by Horace L. Wells.

93 **Buchan** (J. S.). Was Mount Royal an active volcano?
Abstract: Am. Geol., vol. 27, p. 313, 1901.
Discusses the geologic history of Mount Royal.

94 **Buckley** (Ernest Robertson). The clays and clay industries of Wisconsin.
Describes the composition, classification, and properties of clays and the occurrence and distribution of clay deposits in Wisconsin. Includes map of the State, showing the distribution of the various clay beds.

95 — Ice ramparts.
Describes the expansion and contraction of ice and their resulting deformations.

96 **Burk** (W. E.). The fluorspar mines of western Kentucky and southern Illinois.
Min. Ind. for 1900, pp. 293-295, 1901.
Describes the general geology of the region and the occurrence of the fluorspar deposits.

97 **Burr** (Henry T.). The structural relations of the amygdaloidal melaphyr in Brookline, Newton, and Brighton, Mass.
Discusses the evidence of the intrusive character of the melaphyr.

98 **Burritt** (Chas. H.). The Coal Measures of the Philippines.
U. S. War Dept., Rept. to the U. S. Military Governor in the Philippines, 256 pp., 1901. (Not seen.)

C.

100 Calvin (Samuel). Geology of Page County [Iowa]. Iowa Geol. Surv., vol. 11, pp. 400-460, figs. 28-37, and map, 1901. Describes the physiography, the character and occurrence of the Carboniferous, Cretaceous and Pleistocene strata, and the occurrence of economic products.

101 Concerning the occurrence of gold and some other mineral products in Iowa. Am. Geol., vol. 27, pp. 363-372, 1901. Describes the origin and occurrence of various minerals and notes some of the popular fallacies that are held concerning them.


105 —— Charleston Folio—West Virginia. U. S. Geol. Surv., Geol. Atlas of U. S., Folio No. 72, 1901. Describes the geographic and topographic features of the region, the stratigraphy, the character and occurrence of the Carboniferous and Pleistocene strata, the geologic structure, and the mineral resources of the quadrangle.


107 —— Artesian wells. Franklin Inst., Jour., Sept., 1893. (Not seen.)

108 —— Anthracite coal near Perkiomen Creek. Franklin Inst., Jour., August, 1894. (Not seen.)

109 —— Drilling for oil and natural gas in the vicinity of Philadelphia. Franklin Inst., Jour., Sept., 1894. (Not seen.)
Franklin Inst., Jour., March, 1896. (Not seen.)

111 — The Upper Schuylkill River.
Franklin Inst., Jour., Nov., 1897. (Not seen.)

112 — Denver's water supply.
Phila. Sunday Times, Oct. 22, 1899. (Not seen.)

113 — The Grand Canyon of the Colorado.
Phila. Sunday Times, Dec. 24 and 31, 1899. (Not seen.)

114 — Denver's water supply.
Published in the Philadelphia Sunday Times, Oct. 22, 1899. (Not seen.)

115 — Limestones in vicinity of Philadelphia, and hydraulic cement.
Phila. Times, April 8, 1900. (Not seen.)

116 — The source of Camden's [New Jersey] artesian water supply.
Published in the Philadelphia Sunday Times, June 10, 1900. (Not seen.)

117 — The petrified forest of Arizona.
Published in the Philadelphia Sunday Times, July 8, 1900. (Not seen.)

118 — The erosion of the shore line at Atlantic City—land made and lost.
Published in the Philadelphia North American, Aug. 23, 1901. (Not seen.)

119 — Atlantic City's [New Jersey] deep artesian well.
Published in the Philadelphia Sunday Times, Aug. 24, 1901. (Not seen.)

Md. Geol. Surv., Eocene, pp. 95-98, pls. x-xi, 1901.

121 Catlett (Charles). Coal-outcrops.
Discusses the variations in character of the strata of outcrop and the conditions some distance under cover.

122 Chalmers (Robert). Notes on the Pleistocene marine shore lines and landslips of the north side of the St. Lawrence valley.
Describes the shore lines and the occurrence of the landslips.

123 — The sources and distribution of the gold bearing alluvions of Quebec.
Ottawa Nat., vol. 15, pp. 33-36, 1 fig., 1901.
Describes the occurrence of gold and the source of the material.
24 BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY.  [Bull. 203.

124 Chamberlin (Thomas C.).  [Geologic terminology.]
   Jour. Geol., vol. 9, pp. 267-270, 1901.

   Jour. Geol., vol. 9, pp. 273-275, 1901.

126 — [Review of “Meteorological observations of the second Wellman expedition,” by Evelyn B. Baldwin.]
   Jour. Geol., vol. 9, pp. 276-278, 1901.

127 — On a possible function of disruptive approach in the formation of meteorites, comets, and nebulae.
   Jour. Geol., vol. 9, pp. 369-392, pl. 1, 1901.
   Discusses the possibility of mass disruption without collision and the probable effects.

128 — [Review of “Rival theories of cosmogony,” by O. Fisher.]
   Jour. Geol., vol. 9, pp. 458-465, 1901.

129 — Report on some studies relative to primal questions in geology.

130 — On Lord Kelvin’s address on the age of the earth as an abode fitted for life.

   Describes the peculiar occurrence of gold in the nearly horizontal Cambrian sandstones and shales in the vicinity of Deadwood.

132 — The iron-mines of Hartville, Wyoming.
   Describes the occurrence and character of the ore bodies and gives detailed descriptions of the mine workings.

133 Charles (H. W.).  Dakota sandstone in Washington County, [Kansas].
   Describes its general characteristics in this county.

134 Charlton (O. C.).  Note on the Mort and Bluff meteorites.
   Brief description of occurrence and character.

135 Chatard (T. M.) and Whitehead (Cabell).  An examination of the ores of the Republic mine, Washington.
   Describes the chemical studies made of these gold and silver ores.

136 Chester (Albert H.).  Mineralogical notes and explorations.
   Describes the occurrence and chemical composition of several minerals.
137 Chibas (Eduardo J.). Manganese mining in Cuba. 
Abstract of report on the manganese mines near Santiago.

138 Cilley (Frank H.). Some fundamental propositions in the theory of elasticity. A study of primary or self-balancing stresses.
Discusses briefly the application of the theory to the study of the inner condition of the earth.

139 Clapp (Frederick G.). Geological history of the Charles River
[Massachusetts].
Describes the various stages of the river’s development and their causes, its relation to the geologic structure and the Tertiary and Glacial history of the region.

140 Clark (William Bullock) and Martin (George Curtis). The Eocene deposits of Maryland.
Md. Geol. Surv., Eocene, pp. 21-92, pls. 1-14, 1901.
Describes the general stratigraphic relations, distribution, characters, origin of the materials, and the stratigraphic and paleontologic characteristics of the Eocene strata. Discusses their correlation.

141 — — Eocene Mollusca.

142 — — Eocene Molluscoidea (Brachiopoda).
Md. Geol. Surv., Eocene, pp. 203-205, pl. 58, 1901.

143 — — Eocene Echinodermata.

144 Clarke (John M.). The Oriskany fauna of Becraft Mountain, Columbia County, N. Y.
See Clarke (J. M.), No. 971, in U. S. Geological Survey Bulletin, No. 188.

145 — Limestones of central and western New York interbedded with bituminous shales of the Marcellus stage, with notes on the nature and origin of their faunas.
N. Y. State Mus., Bull. No. 49, pp. 115-138, pl. 8, figs. 1-2, 1901.

146 — New Agelacrinites.
Reviews the literature regarding these forms and describes three new species.

147 — Value of Amnigenia as an indicator of fresh water deposits during the Devonic of New York, Ireland and the Rhine-land.
N. Y. State Mus., Bull. No. 49, pp. 199-203, pl. 11, 1901.
Gives a brief review of this publication.

149 Claypole (E. W.). Notes on petroleum in California.
Am. Geol., vol. 27, pp. 150-159, 1901.
Describes the physiographic features of the oil areas, the general geology, and the source of the oil and gas.

150 The Sierra Madre near Pasadena [California].
Contains notes on the Tertiary strata and igneous rocks of the region.

151 Clements (J. Morgan), Van Hise (C. R.) and. The Vermilion iron-bearing district.
See Van Hise (C. R.), 759.

152 Coleman (Arthur P.). Glacial and interglacial beds near Toronto [Canada].
Describes the glacial history, the variations in climate and their effect on the then existing faunas and floras, and the glacial deposits of the region.

153 Marine and fresh-water beaches of Ontario.
Describes the marine deposits, shell gravels, and beaches of the region.

154 The Vermilion River placers [Ontario].
Describes the character and distribution of the placers.

155 Iron ranges of the Lower Huronian [Ontario].
Describes the character and occurrence of the iron-ore bodies of various localities, and the petrographic characters of some of the associated rocks. Discusses the origin of some of the ores and includes notes on the Pleistocene geology.

156 Sea beaches of eastern Ontario.
Contains notes on the Leda clay and Saxicava sand, and describes the character and occurrence of the beach sands and gravels and their faunas.

157 Collie (George Lucius). Wisconsin shore of Lake Superior.
Describes the general geology of the region, the shore formations and beach phenomena, and the characters of the wave erosion and its topography.
158 Collie (George Lucius). Physiography of Wisconsin.  

159 Collier (Arthur J.), Brooks (Alfred H.) and. Glacial phenomena of the Seward Peninsula [Alaska].  
See Brooks (A. H.) and Collier (A. J.), 81.

160 Collins (G. E.). Vein structure at the Reynolds mine, Georgia.  
Eng. and Mg. Jour., vol. 72, pp. 68-70, figs. 1-11, 1901.  
Discusses the vein phenomena in the auriferous crystalline rocks of the region.

161 Comstock (Theodore B.). The geology and vein phenomena of Arizona.  
Gives a general description of the mineral regions. Discusses the orographic disturbances and their effects on ore deposition, and describes the stratigraphic succession in the state.

162 Comstock (W. J.), Allen (O. D.) and. Bastnasite and tysonite from Colorado.  
See Allen (O. D.) and Comstock (W. J.), 11.

163 Cooper (A. S.). The origin and occurrence of petroleum in California.  
Min. Ind. for 1901, pp. 505-509, fig. 1, 1901.  
Describes the occurrence and character of the oil.

164 Corless (C. V.). The Coal Creek colliery of the Crows Nest Pass Coal Co. [Canada].  
Gives a general description of the geological occurrence of the coal.

165 Courtis (W. M.). [In discussion of paper by G. O. Smith and Bailey Willis on “The Clealum iron ores, Washington.”]  
Gives additional analyses of these ores.

166 Cowles (Henry C.). The relation between baseleveling and plant distribution.  

167 Cragin (F. W.). A study of some teleosts from the Russel sub-stage of the Platte Cretaceous series.  
Colo. Coll. Stud., vol. 9, pp. 25-37, 2 pls., 1901. (Not seen.)

168 Crane (W. R.). Kansas coal mining.  
Eng. and Mg. Jour., vol. 72, pp. 748-752, 7 figs., 1901.  
Describes the distribution and characters of the coal-bearing strata.
169 Crosby (W. O.). [Reviews of “Granites of southern Rhode Island and Connecticut, with observations on Atlantic Coast granites in general” by J. F. Kemp; “Contact metamorphism of a basic igneous rock” by U. S. Grant; “Suggestions regarding the classification of the igneous rocks” by W. H. Hobbs; “The nomenclature of feldspathic granolites” by H. W. Turner; and “Some contact phenomena of the Palisade diabase” by J. D. Irving.]
Am. Geol., vol. 27, pp. 51-54, 1901.

Am. Geol., vol. 27, pp. 119-122, 1901.

171 — [Review of “The calcareous concretions of Kettle Point, Lambton County, Ontario,” by R. A. Daly; and “The granite rocks of the Pikes Peak quadrangle” by E. B. Mathews.]
Am. Geol., vol. 27, pp. 253-254, 1901.

172 — [Review of “Some principles of rock analysis” by W. F. Hillebrand; and “Analyses of rocks, Laboratory of the U. S. Geological Survey” by F. W. Clarke.]
Am. Geol., vol. 27, pp. 315-316, 1901.

173 — Are the amygdaloidal melaphyrs of the Boston Basin intrusive or contemporaneous?
Am. Geol., vol. 27, pp. 324-327, 1901.
Reviews a paper by Henry T. Burr.

174 — The tripolite deposits of Fitzgerald Lake, near St. John, New Brunswick.
Describes the character and origin of the deposit.

175 — Geological history of the hematite iron ores of the Antwerp and Fowler belt in New York.
Describes the character, occurrence, and origin of the hematite ores of the region.

176 Cross (Whitman), assisted by Arthur Coe Spencer. General geology, La Plata Folio—Colorado.
Describes the geographic and physiographic features, the character and occurrence of the Jurassic, Cretaceous, Eocene, and Pleistocene strata and igneous rocks, and the geological structure. Includes a statement of the general geologic problems of the region.
177 Cross (Whitman). Outline of geology. (Silverton quadrangle, Colorado.)
Describes the general characteristics of the sedimentary and igneous rocks and the structure of the region.

178 Cummings (Edgar R.). The use of Bedford as a formational name.
Proposes the name Salem limestone for the Bedford limestone, the latter having been preoccupied.

179 — Orthothetes minutus, n. sp. from the Salem limestone of Harrodsburg, Indiana.
Am. Geol., vol. 27, pp. 147-149, pl. 15, 1901.

180 — A section of the upper Ordovician at Vevay, Indiana.
Gives a detailed section, names the fossils found in each bed, and compares this section with that at Cincinnati. Describes four new species.

181 — Notes on the Ordovician rocks of southern Indiana.
Gives section at various localities with notes on the faunas.

182 — Some developmental stages of Orthothetes minutus n. sp.

183 Currie (P. W.). On the ancient drainage at Niagara Falls.
Describes the course of the preglacial river and discusses its mode of formation.

184 Cushing (H. P.). Origin and age of an Adirondack augite andesite.
Science, new ser., vol. 13, p. 100, 1901.
Brief description of character and occurrence.

185 — Geology of Rand Hill and vicinity, Clinton County [New York].
Describes the general geologic history of the region, and the pre-Cambrian and Paleozoic rocks.

186 Dall (William H.). The structure of Diamond Head, Oahu.
Am. Geol., vol. 27, pp. 386-387, 1901.
Refers to the controversy as to the origin of Diamond Head, and states the author's conclusions.

187 — The morphology of the hinge teeth of bivalves.
188 Dall (William H.). A gigantic fossil Lucina.
Describes Lucina megameris from Jamaica

189 — and Bartsch (Paul). A new Californian Bittium.

190 Daly (Reginald A.). The physiography of Acadia.
Describes the characteristics of the several plateau and lowland areas and discusses their origin.

191 — Notes on oceanography.
Discusses phenomena of marine currents and river deflection.


193 — Brush (George J.) and. On a new and remarkable mineral deposit at Branchville, in Fairfield County, Connecticut; with a description of several new species occurring there.
First paper.
See Brush (G. J.) and Dana (E. S.), 88.

194 — — Second Branchville paper.
See Brush (G. J.) and Dana (E. S.), 89.

195 — — Third Branchville paper.
See Brush (G. J.) and Dana (E. S.), 90.

196 — — Fourth Branchville paper—spodumene and the results of its alteration.
See Brush (G. J.) and Dana (E. S.), 91.

197 — — Fifth Branchville paper; with analyses of several manganese phosphates, by Horace T. Wells.
See Brush (G. J.) and Dana (E. S.), 92.

Describes the character and occurrence of the Cambrian, Carboniferous, Jurassic, Cretaceous, Tertiary, and Pleistocene strata, and the water and mineral resources and soils of the region.
199 **Darton** (Nelson Horatio). Comparison of stratigraphy of the Black Hills with that of the Front range of the Rocky Mountains.


200 — and **Keith** (Arthur). Washington Folio, Dist. of Columbia, Maryland, Virginia.


Describes geographic and topographic features, the character and occurrence of Archean rocks and of the Cretaceous, Eocene, Neocene, and Pleistocene strata, the general structure of the Piedmont and Coastal plain regions, and mineral resources of the area.

201 **Davis** (Charles A.). A second contribution to the natural history of marl.

Jour. Geol., vol. 9, pp. 491-506, 1901.


202 **Davis** (William M.). An excursion to the Grand Canyon of the Colorado.


Describes the denudation and displacements of the region and discusses the origin of the drainage system.

203 — Peneploins of central France and Brittany.


Discusses the theory of peneploins.

204 — Note on river terraces of New England.


Discusses the formation of these terraces.

205 — Current notes on physiography.


Contains notes on the Dalles of the Wisconsin and the islands of southern California.

206 — Current notes on physiography.


207 — Current notes on physiography.


Contains abstracts of papers by I. C. Russell on the geology of the Cascade Mountains and by W. T. Lee on the glacier of Mt. Arapahoe.
208 **Davis** (William M.). Current notes on physiography.
Contains abstract of paper by Abbe on the physiography of Allegany County, Maryland.

209 —— Current notes on physiography.
Contains abstract of paper by Ganong on the physiography of New Brunswick.

210 —— Current notes on physiography.
Contains brief abstract of paper by Lindgren, describing the Snake River canyon.

211 —— Current notes on physiography.

212 —— Current notes on physiography.
Contains abstracts of second folio of the Topographic atlas of the United States and of paper by Lee on the debris-covered mesas of Boulder, Colorado.

213 —— Current notes on physiography.
Contains abstracts of the third folio of the Topographic atlas of the United States by R. T. Hill, and of a paper by Crosby on the Nashua Valley, Massachusetts.

214 —— Current notes on physiography.
Gives an abstract of paper by Jones on the Tallulah gorge in Georgia.

215 —— Current notes on physiography.
Reviews recently published folios of the Geologic atlas of the United States.

216 —— Current notes on physiography.
Gives an abstract of a paper by Matthes on the Glacial sculpture of the Big Horn Mountains.

217 —— Current notes on physiography.
Gives an abstract of paper by Shattuck on the Pleistocene problem of the North Atlantic Coastal plain.

218 —— Current notes on physiography.
Reviews paper by Spurr on the structure of the Basin ranges.
219 Davis (William M.). Current notes on physiography.
Contains remarks on glacial lakes in Minnesota, esker lakes in Indiana and the Ontario coast.

220 — Current notes on physiography.
Refers to dikes as topographic features, the character of the plain of St. Lawrence Valley and the question of peneplains.

221 — Current notes on physiography.
Reviews papers by Johnson on the High Plains and by Low on the south shore of Hudson Strait.

222 — Current notes on physiography.
Reviews Hobbs’s paper on the River system of Connecticut and Dowling and Tyrrell on Lake Winnipeg.

223 Dawson (George M.). Summary report on the operations of the Geological Survey for the year 1895.

224 — Geological record of the Rocky Mountain region in Canada.
Gives an account of the physiographic features and a table of geologic formations of the region. Describes the character and occurrence of the rocks of the subdivisions of the Archean, Paleozoic, Mesozoic, and Cenozoic eras.

225 — Physical history of the Rocky Mountain region in Canada.
Contains portion of address delivered before the Geological Society of America.

Describes the geographic distribution of platinum and its occurrence on the Pacific Coast.

227 Dean (Bashford). On two new Arthrodires from the Cleveland shale of Ohio.

228 — On the characters of Myllostonia Newberry.
N. Y. Acad. Sci., Mem., vol. 2, pp. 101-109, pls. 7-8, figs. 3-10, 1901.

229 — Further notes on the relationships of the Arthrognathi.
Discusses the position of the Arthrognathi and the systematic arrangement and nomenclature of the structures.

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230 **Diller** (Joseph Silas). Geomorphogeny of the Klamath Mountains [California–Oregon].
   Science, new ser., vol. 13, p. 97, 1901.

231 — Coos Bay Folio—Oregon.
   Describes the topographic features, the character and the occurrence of the Cretaceous, Eocene, Neocene, and Pleistocene deposits and igneous rocks, and the occurrence of coal and gold.


233 **Donald** (J. T.). The composition of some Canadian limestones.
   Gives chemical analyses and notes on the economic uses of these limestones.

234 **Douglass** (Earl). New species of Merycochoerus in Montana. Part II.
   Describes material from Tertiary beds.

234a — Fossil mammalia of the White River beds of Montana.
   Am. Phil. Soc., Trans. new ser., vol. 20, pp. [only separate seen], pl. ix and map, 1901.
   Describes the characters of the strata and of the fossil mammals collected.

235 **Douglas** (James). Record of borings in the Sulphur Spring Valley, Arizona; and of agricultural experiments in the same locality.
   Gives record of well boring in the valley to the depth of 765 feet.

   Describes the physiography, the character, occurrence, and fauna of the Ordovician strata and the glacial phenomena of the region.

237 — The physical geography of the Red River Valley [Canada].
   Ottawa Nat., vol. 15, pp. 115–120, pls. 8–9, 1901.
   Describes the physiographic history of the region.

238 — See **Tyrrell** (J. B.), 747.

239 **Dresser** (John A.). A hornblende lamprophyre dike at Richmond, P. Q.
   Describes the occurrence of the dike and the characters of the dike rock.


242 — On the petrography of Shefford Mountain [Quebec]. Am. Geol., vol. 28, pp. 204-213, pl. 21, 1901. Describes petrographic characters of essexite, nordmarkite, and pulaskite, and discusses their relations.


248 — Geology of the Beaumont oil fields (Texas). Houston, Texas, June, 1901. (Not seen.)


252 —— On Campodus, Edestus, Helicoprion, Acanthodes, and other Permo-Carboniferous sharks.

253 Eckel (Edwin C.). The formation as the basis for geologic mapping.
Jour. Geol., vol. 9, pp. 708-717, 1901.
Discusses the problems involved and the application of the proposed system.

254 —— The emery deposits of Westchester County, New York.
Min. Ind. for 1900, pp. 15-17, 1901.
Describes briefly the character and occurrence of the deposits.

254a —— A recently discovered extension of the Tennessee white phosphate fields.
Briefly describes occurrence in Decatur County.

255 Eldridge (George H.). The asphalt and bituminous rock deposits of the United States.
Describes the character and geologic occurrence of these materials in the United States.

256 Ells (R. W.). Report on the geology of the Three Rivers map sheet or northwestern sheet of the eastern townships map, Quebec.
Describes the physiography, the character, and occurrence of the Ordovician, Silurian, and Pleistocene deposits and economic resources of the region.

257 —— The physical features and geology of the Paleozoic basin between the Lower Ottawa and St. Lawrence rivers.
Describes the character and occurrence of the Paleozoic rocks and the structure of the region.

258 —— The Carboniferous basin of New Brunswick.
259 Ells (R. W.). The Devonian of the Acadian provinces.
   Reviews previous geologic work on the Devonian strata of the region
   and discusses the problems involved.

260 — Ancient channels of the Ottawa River [Canada].
   Ottawa Nat., vol. 15, pp. 17-30, 1 map, 1901.
   Describes glacial phenomena of the region.

261 Emmons (Samuel Franklin). The secondary enrichment of ore
   deposits.
   Discusses the process of the secondary enrichment of sulphide ore
   bodies by transference and reconcentration of the alteration products of
   the original vein materials by descending surface waters and the chem­
   ical reactions which take place. Describes the author’s observations in
   various mining districts and discusses their bearing on these problems.

262 — Notes on two desert mines in southern Nevada and Utah.
   Contains abstract of paper, read before the Geological Society of
   Washington.

263 Fairbanks (Harold W.). Notes on the geology of the Three
   Sisters, Oregon.
   Abstracts: Jour. Geol., vol. 9, p. 73 (½ p.), 1901.
   Brief notes on occurrence of volcanic rocks.

264 — Pyramid Lake, Nevada.
   Describes the geological history of the lake and adjacent region and
   the characteristics of the volcanic materials.

265 Fairchild (Herman LeRoy). Beach structure in Medina sandstone.
   Am. Geol., vol. 28, pp. 9-14, pls. ii-iv, 1901.
   Discusses the evidences indicating the origin of the ripple marks in
   the Medina sandstone of New York.

266 Farnsworth (P. J.). When was the Mississippi River Valley
   formed?
   Am. Geol., vol. 28, pp. 393-396, 1901.
   Discusses the geologic history of the region.

267 Farrington (Oliver Cummings). On the nature of the metallic
   veins of the Farmington meteorite.

268 — The structure of meteorites.
   Jour. Geol., vol. 9, pp. 51-66, figs. 1-6, pp. 174-190, figs. 7-11, 1901.
   Describes the various structural features of meteorites and discusses
   their origin.


274 — Gould (C. N.) and. The Dakota and Carboniferous clays of Nebraska. See Gould (C. N.) and Fisher (C. A.), 305.


277 Flink (Gust.). On the minerals from Narsarsuk on the firth of Tunugdliarfik in southern Greenland. Meddelelser om Gronland, vol. 24, pp. 11-213, pls. 1-1x, 1901. (Not seen.)


280 Foord (Arthur H.). [Reviews of "Report on the geology and natural resources of the country traversed by the Yellow Head pass route from Edmonton to Tete Jaune Cache, comprising portions of Alberta and British Columbia," by James McErvoy; "On some additional or imperfectly understood fossils from the Cretaceous rocks of the Queen Charlotte Islands, with a revised list of the species from these rocks," by J. F. Whiteaves; and "General Index to the Reports of Progress, 1863 to 1884," by D. B. Dowling.]


281 Foote (H. W.), Penfield (S. L.) and. On bixbyite, a new mineral.

See Penfield (S. L.) and Foote (H. W.), 598.

282 — On clinohedrite, a new mineral from Franklin, N. J.

See Penfield (S. L.) and Foote (H. W.), 599.

283 Pratt (J. H.) and. On wellsite, a new mineral.

See Pratt (J. H.) and Foote (H. W.), 624.

284 Ford (W. E.), Penfield (S. L.) and. On calavarite.

See Penfield (S. L.) and Ford (W. E.), 600.


Contains quotation from letter to Professor Osborn.

286 Frazer (Persifor). Memoir of Franklin Platt.

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

287 — The Eighth Session of the International Congress of Geologists.

Am. Geol., vol. 27, pp. 335-342, 1901.

288 Fuller (Myron L.). Probable representatives of the pre-Wisconsin till in southeastern Massachusetts.

Jour. Geol., vol. 9, pp. 311-329, figs. 1-6, 1901.
Describes the occurrence and character of the till at various localities and the occurrence of possible interglacial rock disintegration.


Describes character and occurrence of gold ores in southeastern Alaska.

G.

290 Gannett (Henry). Profiles of rivers.

291 Geikie (Archibald). The founders of geology.
    Johns Hopkins Univ., George Huntington Williams Memorial lectures,
    vol. 1, 297 pp., 1901.

292 Gidley (J. W.). Tooth characters and revision of the North
    American species of the genus Equus.
    1-27, 1901.

293 Gilbert (Grove Karl). Physical history of Niagara River [New
    York].
    U. S. Geol. Surv., Map of Niagara River and vicinity, 1901.

294 Gilpin (Edwin, jr.). The minerals of Nova Scotia.
    Halifax, N. S., 78 pp., 1901. (Not seen.)

295 Girty (George H.). The Waverly group in northeastern Ohio.
    Gives brief notes on the correlation and succession of the subdivisions.


297 Gould (Charles Newton). Notes on the fossils from the Kansas-
    Oklahoma Red Beds.
    Gives a description of the character of the Red beds and of the evidences
    on which they have been assigned to the Permian. Refers to fossils recently found in the beds.

298 —— Notes on the geology of parts of the Seminole, Creek, Cher-
    okee, and Osage Nations.
    This paper is a contribution to the Red Beds problem of the region
    and indicates that the strata are of Permian and Carboniferous age.

299 —— Tertiary Springs of western Kansas and Oklahoma.
    Describes the occurrence of those springs at the contact between the Tertiary and the underlying Cretaceous or Red Bed strata.

300 —— Notes on the Kansas-Oklahoma-Texas Gypsum Hills.
    Am. Geol., vol. 27, pp. 188-190, 1901.
    Describes the geologic features of the region and discusses the age of the beds.

301 —— The Dakota Cretaceous of Kansas and Nebraska.
    Gives a historical sketch of work on the Dakota group, describes its geographic distribution, character, occurrence, and relations, its economic products, and the general characteristics of its faunas and flora.
    Includes a bibliography.
302 Gould (Charles Newton). On the southern extension of the Marion and Wellington formations.
Describes their character and occurrence in Oklahoma.

303 — The Oklahoma salt plains.
Describes the geologic formations of the region and the occurrence and character of the salt plains.

304 — Oklahoma limestones.
Contains notes on the occurrence and character of the limestones.

305 — and Fisher (C. A.). The Dakota and Carboniferous clays of Nebraska.
Nebr. Board of Agric., Ann. Rept. 1900, pp. 185-194. (Not seen.)

Describes the physiography of the region, the character, occurrence, and distribution of the Silurian and Devonian strata, and the fossils of the Silurian rocks. Includes a bibliography.

Am. Geol., vol. 28, pp. 177-189, pl. 20, 1901.
Gives a section of a well 1,250 ft. in depth and describes the character and occurrence of the Devonian strata of the section exposed.

308 — Recent contributions to the problem of Niagara.
Contains abstract of paper read before the New York Academy of Sciences.

309 Granger (Walter), Osborn (Henry F.) and. Fore and hind limbs of Sauropoda from the Bone Cabin quarry [Wyoming].
See Osborn (H. F.) and Granger (W.), 585.

310 Grant (C. C.). Opening address. Geological Section [Hamilton Scientific Association].
Contains notes on fossils collected near Hamilton, Ontario.

311 — Niagara Falls as an index of time.

312 — Geological notes, etc.
Discusses certain post-glacial problems.
313 **Grant** (Ulysses Sherman). Preliminary report on the copper bearing rocks of Douglas County, Wisconsin. 
Contains the material of the first edition and the results of the field work of 1900 in the same region.

314 — Junction of the Lake Superior sandstone and Keweenawan traps in Wisconsin.
Describes the structural relations in Douglas County.

315 **Gratacap** (L. P.). Paleontological speculations.
Am. Geol., vol. 27, pp. 75-100, 1901.
Discusses the life history and development of various fossil forms.

316 — Paleontological speculations. II.
Discusses biological crises.

317 — The Ward-Coonley collection of meteorites.
Contains notes on the characters of meteorites.

318 **Grave** (Caswell). The oyster reefs of North Carolina; a geological and economic study.
Johns Hopkins Univ., Circ. No. 151, pp. 50-75, 2 figs., 1901.

319 **Greene** (George K.). Contribution to Indiana Paleontology, Part VI.
Describes Devonian fossils from Indiana.

320 — Contribution to Indiana Paleontology. Part VII.
New Albany, Ind., pp. 50-61, pls. 19-21, 1901.
Describes Devonian and Carboniferous fossils from Indiana.

321 — Contribution to Indiana Paleontology. Part VIII.
Describes fossils from upper Paleozoic rocks.

322 **Gregory** (Herbert E.). Andesites of the Aroostook volcanic area of Maine.

323 — [Review of “Physical geography of the Texas region,” by R. T. Hill.]


326 Gregory (J. W.) The plan of the earth and its causes.
    Am. Geol., vol. 27, pp. 100–119, figs. 1–5, and 134–147, pls. 12–14, figs. 1–16, 1901.
    Reviews previous discussions as to the origin of the distribution of the irregularities in the surface of the lithosphere and discusses the pentagonal theory of Élie de Beaumont and the tetrahedral of Green.

327 Gresley (W. S.). Possible new coal plants, etc., in coal.
    Am. Geol., vol. 27, pp. 6–14, pls. 2–7, 1901.
    Describes structures occurring in coal beds which may be of vegetable origin.

    Describes glacial phenomena of the region.

329 Grimsley (G. P.). Kansas mines and minerals.
    Gives an account of the occurrence of the various economic products of the State.

    Int. Cong. Geol., Compte Rendu, viii session, pp. 364–365, 1901.

331 Hall (Christopher W.). Sources of the constituents of Minnesota soils.

332 — Keweenawan area of eastern Minnesota.
    Describes the topography and physiography, relations, associated formations, the occurrence of the Keweenawan rocks and the general characters and petrography of the Chengwatana series.

333 — Keewatin area of eastern and central Minnesota.
    Describes the occurrence of the series at various localities and their megascopic and microscopic characters. Discusses the evidences as to the age of the series.

334 Hallock (William). Peculiar effects due to a lightning discharge on Lake Champlain in August, 1900.
    Jour. Geol., vol. 9, pp. 671–672, 1901.
    Describes the effect upon the rocks struck by the discharge.
335 Halse (Edward). Some silver-bearing veins of Mexico.
Contains brief notes on the vein systems of various mines.

Am. Geol., vol. 27, pp. 41-42 (½ p.), 1901.
Calls attention to the location of a copy of Dr. Gerard Troost's publication on the survey of the environs of Philadelphia.

337 — and Withrow (James R.). The progress of mineralogy in 1899, an analytical catalogue of the contributions to that science during the year.
Abstract: Am. Geol., vol. 27, p. 48 (½ p.), 1901.

338 Hanks (Henry G.). The deep-lying auriferous gravels and table mountains of California.
San Francisco, 15 pp., 6 pls., 1901. (Not seen.)

Am. Geol., vol. 28, pp. 67-76, pl. 9, 1901.
Describes the life and work of Dr. Dawson.

340 Harris (Gilbert D.). Oil in Texas.
Contains notes on the thickness of the Tertiary in the vicinity of Beaumont.

341 Haseltine (R. M.). Lignite deposits or fields of brown coal in North Dakota.
Describes character and occurrence of the lignite beds.

342 Hatcher (J. B.). Diplodocus Marsh, its osteology, taxonomy and probable habits, with a restoration of the skeleton.

343 — On the cranial elements and the deciduous and permanent dentations of Titanotherium.
Carnegie Mus., Annals, vol. 1, pp. 256-262, pls. 7-8, 1901. (Not seen.)

344 — Sabal rigida; a new species of palm from the Laramie.
Carnegie Mus., Annals, vol. 1, pp. 263-264, 1901. (Not seen.)

345 — The Jurassic dinosaur deposits near Canyon City, Colorado.
Carnegie Mus., Annals, vol. 1, pp. 327-341, 1901. (Not seen.)

346 — Some new and little known fossil vertebrates.
Carnegie Mus., Annals, vol. 1, 1901. (Not seen.)


350 Haworth (Erasmus). The Galena-Joplin lead and zinc district. Min. Ind. for 1899, pp. 658-668, 2 figs., 1900. Describes the general geology of the region and the occurrence of the ores.


358 Heilprin (A.). Fossils and their teachings.
   Lecture delivered before the Philadelphia Academy of Natural Sciences.

359 —— How to interpret the facts of geology.
   Abstract of lecture delivered before the Philadelphia Academy of Natural Sciences.

360 Heiney (Wm. M.). River bends and bluffs [Indiana].
   Ind. Acad. Sci., Proc. for 1900, pp. 197-200, 3 figs, 1901.

361 Hershey (Oscar H.). Peneplains of the Ozark Highlands.
   Am. Geol., vol. 27, pp. 25-41, 1901.
   Describes the Cretaceous and Tertiary peneplains, the Lafayette base level, the Ozarkian valleys and the modern valleys.

362 —— Metamorphic formations of northwestern California.
   Am. Geol., vol. 27, pp. 225-245, 1901.
   Describes the character, occurrence, and distribution of the pre-Cretaceous rocks of the Klamath Mountains.

363 —— On the age of certain granites in the Klamath Mountains.
   Am. Geol., vol. 27, pp. 258-259, 1901.
   Brief discussion of the geology of the region and of the intrusive origin of the granite.

364 —— The age of the Kansan drift sheet.
   Am. Geol., vol. 28, pp. 20-25, 1901.
   Describes the occurrence of the Kansan drift in Missouri and discusses its age.

365 —— The geology of the central portion of the Isthmus of Panama.
   Univ. of Cal., Dept. of Geol., Bull., vol. 2, pp. 231-267, and map, 1901.
   Describes the physiographic features and the occurrence and character of several formations. Discusses the relations of the crust movements of the region.

366 —— On the age of certain granites in the Klamath Mountains [California].
   Contains notes on the occurrence of the granites and on the geologic history of the region.

367 —— An unusual type of auriferous deposit.
   Describes occurrence of gold in a semidecomposed rock mass in California and discusses the mode of deposition of the gold.

   Am. Geol., vol. 27, pp. 284-311, 1901.
   Gives an account of the work of this organization and a list of its publications.
369 Hilgard (E. W.). A sketch of the pedalogical geology of California.
   General notes on the soils of the state.

370 Hill (B. F.), Kemp (J. F.) and. Preliminary report on the pre-
Cambricn formations in parts of Warren, Saratoga, Fulton, and Montgomery counties (New York.)
   See Kemp (J. F.) and Hill (B. F.), 421.

371 Hill (Robert T.). [Review of "A record of the geology of Texas
for the decade ending December 31, 1896," by Frederic W. Simonds.]

372 —— The coast prairie of Texas.
   Describes the evidences of differential movements in this region and
its bearing on the occurrence of oil.

373 —— Geographic and geologic features of Mexico.
   Eng. & Mg. Jour., vol. 72, pp. 561-564, 2 figs., 1901.
   Describes the physiography and geology of the country.

   Describes the geographic features, the character and occurrence of the
Cretaceous, Eocene and Neocene strata, the geologic structure, the igne­
ous rocks, and the occurrence of coal and artesian water.

375 Hitchcock (C. H.). Tuff cone at Diamond Head, Hawaiian
Islands.
   Abstracts: Geol. Soc. Am., Bull., vol. 12, p. 462 († p.), 1901; Science,

376 Hobbs (William Herbert). The Newark system of the Pomper-
aug Valley, Connecticut.
   U. S. Geol. Surv., 21st Ann. Rept., Pt. III, pp. 7-160, pls. i-xvii,
figs. 1-59, 1901.
   Gives a sketch of present knowledge regarding this system, describes
the character of the sedimentary and igneous rocks, and discusses the
deformation and degradation of the region.

377 —— The river system of Connecticut.
   Jour. Geol., vol. 9, pp. 469-465, pls. 1-2, figs. 1-2, 1901.
   Describes the occurrence and origin of the jointing and faulting in the
Pomperaug Valley, the occurrence of certain intersecting series of par­
allel lines called troughs, which occupy the drainage channels for vary­
ing distances.

378 —— Diamondiferous deposits in the United States.
   Min. Ind. for 1900, pp. 301-304, 1901.
   Briefly describes occurrence and distribution.
379 **Hobbs** (William Herbert). Connecticut rivers.
   Discusses a recent review by W. M. Davis.


381 **Hoffmann** (G. Christian). On some new mineral occurrences in Canada.

382 **Hoffmann** (G. Christian). On some new mineral occurrences in Canada.
   Describes datolite and faujasite.

383 **Holder** (Charles F.). A remarkable salt deposit.
   Describes occurrence of salt on the Salton desert in California.

384 **Hoffmann** (G. Christian). Erosion on the Pacific Coast.
   Describes some of the physiographic features of the California Coast.

385 **Hollick** (Arthur). A reconnaissance of the Elizabeth Islands [Massachusetts].
   Describes the physiographic and glacial features of the region.

386 **Hollick** (Arthur). Discovery of a mastodon’s tooth and the remains of a boreal vegetation in a swamp on Staten Island, N. Y.

387 **Hollick** (Arthur). Eocene plants.
   Md. Geol. Surv., Eocene, pp. 258-261, pl. 64, 1901.

   Am. Geol., vol. 28, pp. 47-51, 1901.
   Reviews the evidences of the formation of fire clays in situ and states that the occurrence of a considerable portion of them is better explained by considering them as transported clays reduced before deposition.

389 **Hopkins** (T. C.). Graphite and garnet.
   Describes occurrence in Pennsylvania and other regions.

   Contains abstracts of papers read.

391 **Hovey** (E. O.). Geology and geography at the Denver meeting of the American Association for the Advancement of Science.
Contains brief abstract of some of the papers read.

393 — [Abstracts of papers read before the thirtieth annual meeting of the Geological Society of America.]

394 — Geology at the fiftieth meeting of the American Association for the Advancement of Science.
Contains abstracts of papers read.

395 — Notes on the Triassic and Jurassic strata of the Black Hills of South Dakota and Wyoming.

396 — See Whitfield (R. P.), 822.

397 Hovey (Horace C.). The lead and silver mines of Newbury [Massachusetts].
Contains notes on the occurrence of the minerals and the geology of the region.

398 Howe (Ernest). Experiments illustrating intrusion and erosion.
Describes experiments illustrating the formation of laccoliths and the deformation of the invaded strata.

399 Hubbard (George D.). [Review of "Preliminary description of the geology and water resources of the southern half of the Black Hills and adjoining regions in South Dakota and Wyoming" by N. H. Darton, and "The High Plains and their utilization" by Willard D. Johnson.]
Jour. Geol., vol. 9, pp. 732-737, 1901.

400 Hudson (Edward J.), Mabery (Charles H.) and. On the composition of California petroleum.
See Mabery (C. F.) and Hudson (E. J.), 507.

I.

401 Ingall (Elfric Drew). Section of mineral statistics and mines, Annual report for 1898.
Contains statistics of production and notes on the coal fields of Nova Scotia, Manitoba, Northwestern Territories and British Columbia, and on the occurrence of natural gas and oil in Ontario.
50 BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY, [BULL 203.

J.

402 Jaggar (Thomas Augustus). The laccoliths of the Black Hills [South Dakota].
Describes the occurrence of the sedimentary and igneous rocks, and the character, occurrence and distribution of the laccolithic intrusives, and discusses the physiographic form of eroded domes.

403 Johnson (D. W.). Notes on the geology of the saline basins of central New Mexico.

404 Johnson (Willard D.). The high plains and their utilization.
Abstract: Jour. Geol., vol. 9, pp. 734-737, 1901.
Discusses the origin and structure of the region.

405 Joly (J.). An estimate of the geological age of the earth.

406 Jones (S. P.). The geology of the Tallulah Gorge [Georgia].
Am. Geol., vol. 27, pp. 67-75, pls. 9-11, figs. 1-3, 1901.
Describes the physiographic features of the region and the origin of the gorge.

407 Julien (Alexis A.). A study of the structure of fulgurites
Jour. Geol., vol. 9, pp. 673-693, figs. 1-3, 1901.
Gives the results of the study of four fulgurites.

408 — Erosion by flying sand of the beaches of Cape Cod.

409 — The geology of central Cape Cod [Massachusetts].
Abstract: Am. Geol., vol. 27, p. 44 ($\frac{1}{2}$ p.), 1901.
Contains notes on the glacial phenomena of the region.

410 — [Discussion of paper by J. F. Kemp on "The Cambro-Ordovician outlier at Wellstown, Hamilton County, New York."]
Discusses the origin of the sand in the limestones.

K.

Describes the geographic features, the stratigraphy, the character and occurrence of the Cambrian, Silurian, Devonian, and Carboniferous rocks, the geologic structure, and the mineral resources of the region.
412 Keith (Arthur), Darton (N. H.) and. Washington Folio, District of Columbia, Maryland, Virginia.
See Darton (N. H.) and Keith (Arthur), 200.

413 Kemp (James Furman). The Albany meeting of the Geological Society of America.
Science, new ser., vol. 13, pp. 95-100, 133-139, 1901.
Contains abstracts of papers presented.

414 — The Cambro-Ordovician outlier at Wellstown, Hamilton County, New York.
Contains brief description of occurrence of small outliers of Paleozoic strata within the crystalline area of the region.

415 — [Review of “Clays of New York, their properties and uses” by Heinrich Ries.]

416 — New asbestos region in northern Vermont.
Describes the occurrence of asbestos associated with serpentine.

417 — Physiography of Lake George.
Describes briefly the physiographic history of the region.

418 — Calculation of rock analyses.
School of Mines Quart., vol. 22, p. 75, 1901.

419 — New asbestos region in northern Vermont.
Abstract of paper read before the N. Y. Academy of Sciences.

420 — Physiography of Lake George, New York.
Abstract of paper read before the N. Y. Academy of Sciences.

420a — Notes on the occurrence of asbestos in Lamoille and Orleans counties, Vermont.

N. Y. State Mus., 53d Ann. Rept., pp. r17-r35, pls. 3-8, 1901.
Describes the local geology of various townships of the counties named.
422 **Keyes** (Charles R.). *A depositional measure of unconformity.*
   Describes the development of the Carboniferous sediments in the Missis­
   sippi Valley and Southwestern regions.

423 — Origin and classification of ore deposits.
   Discusses the nature of ore deposits, general methods of ore formation,
   the classification of ore deposits, and certain other phases of ore deposits.

424 — Derivation of the terrestrial spheroid from the rhombic
   dodecahedron.
   Jour. Geol., vol. 9, pp. 244–249, 1901.
   Discusses Green’s hypothesis of the tetrahedral form of the earth.

425 — Composite genesis of the Arkansas Valley-through the Ozark
   highlands.
   Jour. Geol., vol. 9, pp. 486–490, figs. 1–2, 1901.
   Discusses the evidences which indicate that there has been but one
   uplift in the region and that the river eroded its bed as fast as the strata
   were raised.

426 — [Review of “Uintacrinus; its structure and relations by
   Frank Springer; “Oriskany fauna of Becraft Mountain”
   by J. M. Clarke; and “Stratigraphical succession of the fossil
   floras of the Pottsville formation in the southern
   Anthracite coal field” by David White.]
   Jour. Geol., vol. 9, pp. 539–547, 1901.

427 — [Review of “Zinc and lead region of north Arkansas” by
   John C. Branner.]
   Jour. Geol., vol. 9, pp. 634–636, 1901.

428 — Ore formation on the hypothesis of concentration through
   surface decomposition.
   Discusses the evidence as to the derivation of the lead and zinc ores
   of the Ozark region and their bearing on the origin of ore deposits in
   general.

429 — Nomenclature of the Cambrian formations of the St. François
   Mountains [Missouri].
   Discusses the validity of certain names applied to the Cambrian for­
   mations of the region.

430 — [Reviews of “Paleozoic faunas of northern Arkansas” by
   H. S. Williams; “What is an Echinoderm?” by F. A.
   Bather; and “Structure and relations of Uintacrinus” by
   Frank Springer.]
431 Keyes (Charles R.). A schematic standard for the American Carboniferous.
   Am. Geol., vol. 28, pp. 299-305, fig. 1, 1901.
   Presents a general section of the Carboniferous of the Mississippi Valley and discusses its correlation with other regions.

432 —— [Review of “Geology of eastern Choctaw coal field” by J. A. Taff and G. I. Adams.]
   Am. Geol., vol. 28, pp. 318-319, 1901.

433 —— Time values of provincial Carboniferous terranes.
   Discusses the time ratios of the several subdivisions of the Carboniferous of the Mississippi Valley region.

434 —— Note on the correlation of the Clarinda well section with the schematic section of the Carboniferous.
   Iowa Geol. Surv., vol. 11, pp. 461-463, 1901.
   Compares the well section with the general section.

435 —— A depositional measure of unconformity.

436 —— On a crinoidal horizon in the Upper Carboniferous.
   Describes its occurrence and its bearing on the stratigraphy of the Mississippi Valley.

437 —— Zone of maximum richness in ore bodies.
   Contains abstracts of recent papers by Emmons and Weed.

438 —— Horizons of Arkansas and Indian Territory coals compared with those of other trans-Mississippian coals.
   Discusses the relations of the coal-bearing horizons of the trans-Mississippian region.

439 —— The stratigraphical location of named trans-Mississippian coals.
   Eng. and Mg. Jour., vol. 72, p. 198, 1901.
   Gives list of geological formations and the coals occurring in each.

440 —— Contiguity of ore deposits of different generic relationships.

441 —— Diverse origins and diverse times of formation of the lead and zinc deposits of the Mississippi Valley.
   Mining and Metallurgy, vol. 24, pp. 715-717, 1901. (Not seen.)
442 Kindle (Edward M.). The Devonian fossils and stratigraphy of Indiana.


Reviews the nomenclature of the formations and describes the lithologic and faunal character of many sections, and the characters of a large number of fossils from the Devonian rocks of the State. Discusses the correlation of the formations.

443 Kingsley (J. S.). The origin of the Mammals.


444 Knapp (S. A.). Tonopah [Nevada].

Mg. and Sci. Press., vol. 82, p. 231, 1901.

Describes occurrence of gold and silver at this locality.

445 Knight (Nicholas). Some Iowa dolomites.


Contains chemical analyses of the dolomites.

446 Knight (W. C.). Description of Bates Hole [Wyoming].


Describes the physiographic and geologic features of the region.

447 —— The petroleum fields of Wyoming.

Eng. and Mg. Jour., vol. 72, pp. 358-359, and map, 628-630, 4 figs., 1901.

Describes the geology and character and occurrence of the oil in the several oil-bearing districts of the State.

448 —— The Sweetwater mining district, Fremont County, Wyoming.

Wyom. Univ., School of Mines, 35 pp., 1 map, 1901.

Describes occurrence of gold in this district.

449 —— Geology of the oil fields [Wyoming].

Wyom. Univ., School of Mines, Bull. No. 4, 1901. (Not seen.)

450 —— and Slosson (E. E.). The Dutton, Rattlesnake, Arago, Oil Mountain, and Powder River oil fields [Wyoming].


Describes the occurrence and character of the oils in the several districts.

451 —— Alkali lakes and deposits [Wyoming].


Describes the character, occurrence, and origin of the deposits of considerable depth.

452 Knowlton (Frank Hall). [Report on the Clarno flora, Oregon.]

Univ. of Cal., Dept. of Geol., Bull., vol. 2, pp. 287-291, 1901.

Gives list of fossil plants collected.
453 **Knowlton** (Frank Hall). [Report on the flora of the Mascall formation, Oregon.]
Univ. of Cal., Dept. of Geol., Bull., vol. 2, pp. 308-309, 1901.
Gives list of fossils collected.

454 — Report on fossil wood from the Newark formation of South Britain, Connecticut.
Briefly describes material.

[New Jersey.]
Describes the composition of Portland cement, and the character and occurrence of the lower Paleozoic rocks from which the materials are derived. Includes detailed descriptions of localities.

456 — The mining industry. [New Jersey.]
Contains statistics and notes on iron, zinc, and copper.

457 — and **Weller** (Stuart). Paleozoic limestones of Kittatiny Valley, New Jersey.
Describes the lithologic and faunal characters of the subdivisions of the Cambrian and Ordovician series and the structure of the region.

458 **Kunz** (George F.). Des progrès de la production des pierres précieuses aux États-Unis.
Int. Cong. Geol., Compte Rendu, viii session, pp. 393-395, 1901.

L.

459 **Laflamme** (J. C. K.). Modifications remarquables causées à l'Embouchure de la Rivière Ste-Anne par l'éboulement de St-Alban.

460 — Éboulement à Saint-Luc-de-Vincennes, Rivière Champlain, le 21 Septembre, 1895.

461 **Lakes** (Arthur). The American Nettie [Colorado].
Describes the geology of the region and the occurrence of ores in cave deposits.

462 — Cripple Creek [Colorado].
Describes volcanic rocks and phenomena of the region.
463 Lakes (Arthur). The Curtis coal mine [Colorado].
Brief description of occurrence and character of coal near Colorado Springs.

464 — Cave ore deposits [Colorado].
Describes character and occurrence of ore bodies in the San Juan region.

465 — The Cerrillos anthracite mines [New Mexico].
Describes character and occurrence of coal in this region.

466 — A new coal field [New Mexico].
Describes the geology of the region and the occurrence of coal.

467 — The turquoise mines [New Mexico].
Describes occurrence of turquoise.

468 — Change of ore bodies with change of country rock.
Discusses some phenomena accompanying ore deposition.

469 — Peculiar geological formations of the Southern States.
Contains notes on the general geology of the region.

470 — Oil fields of California.
Describes the general geology of southern California and the occurrence of oil.

471 — Prospecting for oil in Colorado.
Describes general geology and occurrence of oil in Colorado.

472 — Building and monumental stones of Colorado.
Describes the general characters and occurrence of various building stones.

473 — Sedimentary building stones of Colorado.
Describes occurrence and character of building stones from sedimentary strata.

474 — Petroleum in western North America.
Describes the occurrence of oil in this region.


484a — and Palache (Charles). The Berkeley Hills [California]. A detail of Coast Range geology. Univ. of Cal., Dept. of Geol., Bull., vol. 2, pp. 349–450, pls. 10–17, and map, 1901. Describes the character, occurrence and relations of the formations of the region, erosion intervals, faults, and the microscopic characters of the volcanic rocks.
58 BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY, [BULL. 203.

485 Le Conte (Joseph). A century of geology.

Describes the geological relations of the ore bodies and gives a chemical analysis of the ore.

487 Lee (Willis T.). The Morrison formation of southwestern Colorado.
Jour. Geol., vol. 9, pp. 343-352, figs. 1-4, 1901.
Describes the character and occurrence of the Jurassic and Cretaceous strata of the region, and discusses the stratigraphic and paleontologic evidences of the age of the Morrison formation.

488 L'Hame (Wm. E.). Thunder Mountain, Idaho.
Describes briefly occurrence of gold in the region.

Jour. Geol., vol. 9, pp. 79-87, and 441-458, 1901.

490 — Van Hise (C. R.) and The Mesabi district.
See Van Hise (C. R.), 759.

491 Leonard (Arthur Gray). The basic rocks of northwestern Maryland and their relation to the granite.
Am. Geol., vol. 28, pp. 135-176, pls. 15-19, 1901.
Describes the geologic occurrence and relations and discusses the origin of the various facies.

492 LeRoy (Osmond Edgar). Geology of Rigaud Mountain, Canada.
Describes the topographic and general geologic features of the region and the microscopic characters of the igneous rocks.

493 Letson (Elizabeth J.). Post-Pliocene fossils of the Niagara River gravels.

494 Leverett (Frank). Old channels of the Mississippi in southeastern Iowa.
Annals of Iowa, April, 1901. (Not seen.)

495 Lindgren (Waldemar). Metasomatic processes in fissure veins.
Discusses the general features of the changes in rocks contiguous to ore-bearing fissures, and the minerals developed by metasomatic processes in fissure veins. Gives an account of fissure veins in various mining regions classified according to metasomatic processes.
Lindgren (Waldemar). Trias in northeastern Oregon. 
Describes briefly character and distribution.

Describes the geologic structure of the region and the character of the Jurassic and Cretaceous sediment of the region.

Low (A. P.). Report on an exploration of part of the south shore of Hudson Strait and of Niagara Bay [Canada]. 
Published in 1899.
Describes the physiography and crystalline rocks of the region.

Lowry (J. D.). Mining in Lower California. 
Contains notes on the occurrence of gold, silver, and copper ores.

Lucas (Frederic A.). A new rhinoceros, Trigonias osborni, from the Miocene of South Dakota. 

Lucas — A new dinosaur, Stegosaurus marshi, from the Lower Cretaceous of South Dakota. 

Lucas — The pelvic girdle of Zeuglodon, Basilosaurus cetoides (Owen), with notes on other portions of the skeleton. 
Includes section of the Zeuglodon beds.

Lucas — A new fossil Cyprinoid, Leuciscus turneri, from the Miocene of Nevada. 

Lucasa — A flightless Auk, Mancalla californiensis, from the Miocene of California. 

Low — Vertebrates from the Trias of Arizona. 
Describes briefly material recently collected.

Describes the character and occurrence of the serpentine.
507 **Mabery** (Charles F.) and **Hudson** (Edward J.). On the composition of California petroleum.
   Gives results chemical analyses of petroleum oil from various parts of California.

508 **McBeth** (W. A.). The development of the Wabash drainage system and the recession of the ice sheet in Indiana.
   Describes drainage and glacial phenomena.

509 — A theory to explain the western Indiana bowlder belts
   Considers they were deposited by floating ice.

510 **Macbride** (Thomas H.). Geology of Clay and O'Brien counties [Iowa].
   Iowa Geol. Surv., vol. 11, pp. 463-497, figs. 38-39, and map, 1901.
   Describes physiography, the occurrence and character of the Pleistocene beds and the occurrence of economic products.

511 **McCalley** (Henry). The Alabama coal fields.
   Describes the general occurrence and character of the coal.

512 **McCallie** (S. W.). A preliminary report on the roads and road-building materials of Georgia.
   Ga. Geol. Surv. Bull. 8, 264 pp., pis. 13-14, 1901. (Not seen.)

513 — Some notes on the trap dikes of Georgia.
   Am. Geol., vol. 27, pp. 133-134, pls. 12-14, 1901.
   Describes the character and occurrence of dike rocks which cut the crystalline rocks.

514 **McCaslin** (D. S.). The geology of the artesian basin in South Dakota.

515 **McCormick** (E.). The Santa Fe mining district, Nevada.
   Describes the geologic structure of the region and the occurrence of copper and silver ores.

516 **McEvoy** (James). Report on the geology and natural resources of the country traversed by the Yellow Head Pass route from Edmonton to Tete Jaune Cache, comprising portions of Alberta and British Columbia
   Describes the physiography and the general character and occurrence of the Tertiary, Cretaceous, Cambrian and Archean rocks of the region.
517 McNairn (W. Harvey). On a large phlogopite crystal.  
Briefly describes character and occurrence.

518 Malcohnson (James W.). The Sierra Mojada, Coahuila, Mexico, and its ore deposits.  
Eng. and Mg. Jour., vol. 72, pp. 705-710, figs. 1-5, 1901.  
Contains notes on the geology and ore bodies of the region.

519 Manning (P. C.). Glacial potholes in Maine.  
Describes the occurrence and character of the potholes along the coast of Maine and discusses the evidences indicating their origin.

520 Martin (Daniel S.). [Minerals at Haddam, Maine.]  
Abstract: Am. Geol., vol. 27, p. 44 (6 l.), 1901.  
Mentions occurrence of certain minerals.

521 —— Geological notes on the neighborhood of Buffalo.  

522 Martin (George Curtis), Clark (William Bullock) and. Eocene Echinodermata.  
See Clark (W. B.) and Martin (G. C.), 143.

523 —— Eocene Molluscoidea (Brachiopoda).  
See Clark (W. B.) and Martin (G. C.), 142.

524 —— Eocene Mollusca.  
See Clark (W. B.) and Martin (G. C.), 141.

525 —— The Eocene deposits of Maryland.  
See Clark (W. B.) and Martin (G. C.), 140.

526 Martin (J. O.). The Ontario coast between Fairhaven and Sodus bays [New York].  
Describes the lake shore phenomena of the region.

See Becker (George F.), 50.

528 Mason (F. H.). Potters clay at Middle Musquodoboit [Nova Scotia].  
Describes occurrence and chemical character of the material.

529 Matthew (George F.). Preliminary notice of the Etcheminian fauna of Newfoundland.  
Contains descriptions of several new species.
530 Matthew (George F.). Preliminary notice of the Etcheminian fauna of Cape Breton.

531 — Acrothyra and Hyolithes—a comparison.
   (Not seen.)

532 — Hyolithes gracilis, and related forms from the Lower Cambrian of the St. John group.
   (Not seen.)

533 — [Devonian of the Acadian provinces.]
   Discusses recent papers by David White.

534 — [Review of “Beitrage zur Kenntniss des Siberischen Cambrium I,” by E. von Toll.]
   Am. Geol., vol. 27, pp. 54–56, 1901.

535 — Are the St. John plant beds Carboniferous?
   Discusses the stratigraphic and faunal evidences of the age of the beds.

536 — Les plus anciennes faunes Paleozoiques.
   Int. Cong. Geol., Compte Rendu, viii session, pp. 313–316, 1901.
   Gives a résumé of what is known regarding the earliest faunas of eastern Canada.

537 — A backward step in Paleobotany.
   Paper read before the Royal Society of Canada.

538 Matthew (W. D.). Additional observations on the Creodonta.
   Discusses the classification of the group and revision of genera.

539 Mayer (Alfred Goldsborough). [Review of “The variations of a newly arisen species of Medusa.”]

540 Mead (J. R.). The Flint Hills of Kansas.
   Discusses the origin of these hills.

541 Memminger (C. G.). Progress in the phosphate mining industry of the United States during 1900.
   Min. Ind. for 1900, pp. 513–518, 1901.
   Describes occurrence of phosphate in several States.
542 **Merriam** (John C.). A contribution to the geology of the John Day basin [Oregon].
Univ. of Cal. Dept. of Geol., Bull., vol. 2, pp. 269-314, pls. 6-8, fig. 1, 1901.
Gives a sketch of previous explorations and literature of the region, and describes the classification, character, occurrence, relations, and faunas of the Cretaceous, Tertiary, and Pleistocene strata.

543 A geological section through the John Day basin [Oregon].
Describes the character and occurrence of the John Day beds and the associated strata.

544 **Merrill** (George P.). The Department of Geology in the National Museum.
Am. Geol., vol. 28, pp. 107-123, pls. 10-14, 1901.
Gives an account of the methods employed in caring for and rendering available to students the materials in charge of this department of the Museum, and in displaying the same for the benefit of the public.

544a On a stony meteorite which fell near Felix, Perry County, Alabama, May 15, 1901.

545 Guide to the study of the collections in the section of applied geology—the nonmetallic minerals [U. S. National Museum].
Describes the character, occurrence, and uses of the nonmetallic minerals.

546 and **Stokes** (H. N.). A new stony meteorite from Allegan, Michigan, and a new iron meteorite from Mart, Texas.
Describes the occurrence, characters, and chemical composition of the material.


548 **Miller** (B. L.). Geology of Marion County [Iowa].
Iowa Geol. Surv., vol. 11, pp. 130-197, pl. 5, figs. 9-12 and map, 1901.
Describes the physiography, the character and occurrence of the Carboniferous and Pleistocene deposits and the occurrence of coal.

549 **Miller** (Gerrit S., jr.). Preliminary list of mammals of New York.
Contains list of fossil species.

550 **Miller** (Willet G.). On some newly discovered areas of nepheline syenite in central Canada.
Am. Geol., vol. 27, pp. 21-25, 1901.
Describes character and occurrence in Ontario.
551 Miller (Willet G.). Iron ores of Nipissing district [Ontario].
   figs., 1901.
   Describes the physiography of the region and the occurrence and
   character of the iron ores in Huronian rocks.

552 —— The iron ore fields of Ontario.
   4, pp. 265-283, 3 figs., 1901.
   Contains notes on the occurrence and character of iron ore deposits
   in Ontario.

553 Miller (W. W. jr.). Analysis of emery from Virginia.

554 —— Examination of sandstone from Augusta County, Virginia.
   Abstract: Am. Geol., vol. 27, p. 315 (1 p.), 1901.

555 —— Analysis of smithsonite from Arkansas.
   Abstract: Am. Geol., vol 27, p. 315 (1 p.), 1901.

   Abstract of lecture delivered at the Wagner Institute, Philadelphia,
   Pennsylvania.

557 Morganroth (L. C.). The caves of Huntington County Pennsylvania.
   Describes the character of the cave.

   Describes crystallographic characters of pectolite, atacamite, realgar,
   vesuvianite, chrysoberyl, and pyroxene.

559 Nansen (Fridtjof). The Norwegian North Polar expedition, 1893-1896.
   Scientific results, vols. 1-2, 1901. Longmans, Green & Co., London,
   New York, 1901.

560 Nason (Frank L.). On the presence of a limestone conglomerate
   in the lead region of St. Francois County, Missouri.
   Brief note announcing discovery of limestone conglomerate between
   the St. Joseph or-Bonne Terre limestone and the Potosi in Missouri.

561 —— The geological relations and the age of the St. Joseph and
   Potosi limestones of St. François County, Missouri.
   Describes occurrence of a conglomerate between the two formations
   and gives a columnar section.
562 Nason (Frank L.). The origin of vein cavities.
   Discusses the origin of these vein phenomena.

563 Nevins (J. N.). Roofing slate quarries of Washington County [New York].
   Discusses the slates of the various quarries.

564 — Emery mines of Westchester County [New York].

565 Newland (D. H.). The serpentines of Manhattan Island and vicinity and their accompanying minerals.
   Describes the microscopic and chemical characters of the serpentines and the minerals associated with them. Discusses origin of the serpentines.

566 Nichols (Henry W.). Nitrates in cave earths.
   Jour. Geol., vol. 9, pp. 236-243, 1901.
   Reviews paper by William H. Hess on the same subject, gives a number of analyses of soil, limestone, and cave earth and discusses the origin of the nitrates.

567 Nicolson (J. T.), Adams (Frank D.), and. An experimental investigation into the flow of marble.
   See Adams (F. D.) and Nicolson (J. T.), 5.

568 Norton (William Harmon). Geology of Cedar County [Iowa].
   Iowa Geol. Surv., vol 11, pp. 282-396, pls. 7-12, figs. 16-27, and maps, 1901.
   Describes the physiographic and drainage features, the character and occurrence of the Silurian, Devonian, and Pleistocene deposits and the occurrence of economic products.

569 — The relation of physical geography to other science subjects.

570 Nutter (Edward Hoit). Sketch of the geology of the Salinas Valley, California.
   Jour. Geol., vol. 9, pp. 330-336, 8 figs., 1901.
   Describes the formation of the valley and the character and occurrence of the Tertiary strata which were laid down in this trough.

571 Nylander (Olof O.). Shells of the marl deposits of Aroostook County, Maine, as compared with the living forms in the same locality.
   Gives list of fossils determined.
572 **Obalski (J.).** Notes on the magnetic iron sand of the north shore of the St. Lawrence [Canada].
   Gives chemical analyses of the sand and describes its distribution.

573 **Ordoñez (Ezequiel).** Las rhyolitas de Mexico. I.
   Bull. No. 15, 76 pp., pis. 1-11, 1901.
   Describes the macroscopic and microscopic characters of the rhyolites and their distribution.

574 — **La industria minera en Mexico.**
   Ciencia y Arte, Mexico, 19 pp., 1901. (Not seen.)

575 — **The mining district of Pachuca, Mexico.**
   Contains notes on the geology and mineralization of the region.

576 **Ortmann (Arnold E.).** The theories of the origin of the Antarctic faunas and floras.
   Reviews the literature on the subject.

577 **Orton (Edward).** Petroleum and natural gas in New York.
   See Bull. U. S. Geol. Surv., No. 188, Orton No. 4172.

578 **Osborn (Henry Fairfield).** The recent progress of vertebrate paleontology in America.
   Abstract of lecture delivered at Trinity College, Hartford, Conn.

579 — **Recent zoo-paleontology.**
   Contains notes on papers relating to the John Day beds and to the Kansas chalk.

580 — [Review of “Diplodocus Marsh. Its osteology, taxonomy, and probable habits, with the restoration of the skeleton” by J. B. Hatcher.]

581 — **Recent zoo-paleontology.**
   Reviews Wortman’s work on the Carnivora and Gidley’s work on Pleistocene horses.

582 — **Des méthodes précises mises actuellement en œuvre dans l’étude des vertébrés fossiles des États-Unis d’Amérique.**
   Int. Cong. Geol., Compte Rendu, viii session, pp. 353-356, pls. i-ii, 1901.
583 Osborn (Henry Fairfield). Corrélation des horizons de mammifères Tertiaires en Europe et en Amérique.
Int. Congr. Geol., Compte Rendu, viii session, pp. 357-363, 1901.

584 — Systematic revision of the American Eocene primates and of the rodent family Myxodectidae.

585 — and Granger (Walter). Fore and hind limbs of Sauropoda from the Bone Cabin quarry [Wyoming].

585a Palache (Charles), Lawson (Andrew C.), and. The Berkeley Hills [California]. A detail of Coast Range geology.
See Lawson (A. C.) and Palache (C.), 485a.

586 Parkinson (John). The hollow spherulites of the Yellowstone and Great Britain.
Describes the author’s observations in the Yellowstone region and discusses the origin of spherulites.

587 — Some lake basins in Alberta and British Columbia.
Describes the physiography of the region and the character of the lake basins.

588 Patton (H. B.). Abstracts of papers read before Section E of the American Association for the Advancement of Science, August 26-29, 1901.

Geol Mag., new ser., vol. 8, pp. 167-174, 223-231, 253-265, 1901
Contains discussions of certain observations in North America.

N. Y. Acad. Sci., Annals, vol. 13, pp. 419-430, pl. 16, figs. 4-5, 1901.
Describes the general geology and structure of the region and the occurrence of the crystalline rocks and the alteration products.

591 Peckham (Herbert E.). On the bituminous deposits situated at the south and east of Cardenas, Cuba.
Describes the occurrence and extent of these bituminous deposits.

592 Peckham (S. F.). [Remarks on paper by Herbert E. Peckham on the bituminous deposits near Cardenas, Cuba.]
68  BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY,  [BULL. 203.

593  Penfield (Samuel L.). On the chemical composition of childrenite.
124-125, 1901. (From Am. Jour. Sci., vol. 18, pp. 315-316, 1880.)

594 —— On the chemical composition of amblygonite.
121-123, 1901. (From Am. Jour. Sci., vol. 18, pp. 295-301, 1879.)

595 —— On spangolite, a new copper mineral.
124-125, 1901. (From Am. Jour. Sci., vol. 18, pp. 315-316, 1880.)

596 —— On pearcite, a sulpharsenite of silver.

597 —— On the chemical composition of hamlinite and its occurrence
with bertrandite at Oxford County, Maine.
287-290, 1901. (From Am. Jour. Sci., vol. 4, pp. 313-316, 1897.)

283-286, 1901. (From Am. Jour. Sci., vol. 4, pp. 105-107, 1897.)

599 —— On clinohedrite, a new mineral from Franklin, N. J.
291-296, 1901. (From Am. Jour. Sci., vol. 5, pp. 289-293, 1898.)

Describes occurrence and crystallographic characters of the material.

601 —— and Pirsson (L. V.). Contributions to mineralogy and petrography, from the laboratories of the Sheffield Scientific School of Yale University.
Yale Bicentennial publications. August, 1901, 482 pp., Charles Scribner's Sons, New York.

602 —— and Pratt (J. H.). On the occurrence of thaumasite at West Paterson, New Jersey.

603 —— and Warren (C. H.). Some new minerals from the zinc mines at Franklin, N. J., and note concerning the chemical composition of ganomalite.


Pierce (S. J.). The Cleveland water-supply tunnel [Ohio]. Am. Geol., vol. 28, pp. 380-385, 1901. Describes the quicksands and clays and other material penetrated in driving this tunnel.


615 **Pirsson** (Louis V.). On mordenite.

616 — On the petrography of Square Butte in the Highwood Mountains of Montana.

617 — Petrography of the rocks of Yogo Peak [Montana].

617a **Penfield** (Samuel L.) and. Contributions to mineralogy and petrography, from the laboratories of the Sheffield Scientific School of Yale University.
See Penfield (S. L.) and Pirsson (L. V.), 601.

618 — **Weed** (Walter H.) and. Missourite, a new leucite rock from the Highwood Mountains of Montana.
See Weed (Walter H.) and Pirsson (Louis V.), 799.

619 — — Geology of the Shonkin sag and Palisade Butte laccoliths in the Highwood Mountains of Montana.
See Weed (W. H.) and Pirsson (L. V.), 798.

620 **Pompecky** (J. F.). Jura-fossilien aus Alaska.

621 **Pratt** (Joseph Hyde). A peculiar iron of supposed meteoric origin from Davidson County, North Carolina.
Describes character of the material and gives chemical analysis.

622 — The occurrence and distribution of corundum in the United States.
Describes the modes of occurrence and distribution of corundum and the corundum localities in the United States.

623 — On northupite; pirssonite, a new mineral; gay-lussite and banksite from Borax Lake, San Bernardino County, California.

624 — and **Foote** (H. W.). On wellsite, a new material.
625 **Pratt** (Joseph Hyde) and **Penfield** (S. L.). On the occurrence of thauamasite at West Paterson, New Jersey. See Penfield (S. L.) and Pratt (J. H.), 602.


629 **Prosser** (Charles S.). The classification of the Waverly series of Central Ohio. Jour. Geol., vol. 9, pp. 205-231, figs. 1-4, 1901. Reviews the various classifications of this series that have been published, describes the character and occurrence of the strata, and gives the author’s classification.

630 —— [On the use of the term Bedford limestone.] Jour. Geol., vol. 9, pp. 270-272, 1901. Reviews an article by C. E. Siebenthal on the same subject and considers the name Bedford as applied in Ohio should be accepted.

631 —— The Paleozoic formations of Allegany County, Maryland. Jour. Geol., vol. 9, pp. 409-429, figs. 1-4, 1901. Describes the character and occurrence of the various Paleozoic formations and discusses their probable correlations with New York and Pennsylvanian formations.

632 —— Names for the formations of the Ohio Coal Measures. Am. Jour. Sci., 4th ser., vol. 11, pp. 191-199, 1901. Reviews previous classification and nomenclature of the Coal Measures of Pennsylvania and West Virginia and presents a section and the classification of the Coal Measures of Maryland, which has been adopted for the Ohio Coal Measures.

633 **Purdue** (A. H.). Valleys of solution in northern Arkansas. Jour. Geol., vol. 9, pp. 47-50, figs. 1-2, 1901. Describes the character and occurrence of these valleys and discusses their origin.

634 —— Illustrated note on a miniature overthrust fault and anticline. Jour. Geol., vol. 9, pp. 341-342, 1 fig., 1901. Describes a miniature anticline passing into a reversed fault at Ozark, Ark.

636 **Purington** (Chester Wells). Economic geology. La Plata Folio, Colo.


Describes the vein systems, the occurrence of gold and silver ores, the placer deposits, and the occurrence of coal.

Q.

637 **Queneau** (A. J.). The grain of igneous rocks.


R.

638 **Randolph** (Beverley S.). [In discussion of paper by Charles Catletton, "Coal outcrops."]


639 **Ransome** (Frederick Leslie). A report on the economic geology of the Silverton quadrangle, Colorado.


Describes the lode fissures, the characters of the ores and of the stocks or masses, and the origin of the ore deposits. Includes detailed descriptions of special areas.

640 —— A peculiar clastic dike near Ouray, Colorado, and its associated deposit of silver ore.


Describes the occurrence, character, and origin of the dike and of the associated ore body.

641 **Raymond** (R. W.). Recent contributions to the science of ore deposits.

Min. Ind. for 1900, pp. 753-762, 1901.

Gives a review and summaries of recent important papers on the origin of ore deposits.

642 **Reid** (Harry Fielding). De la progression des glaciers, leur stratification, et leurs veines bleues.

Int. Cong. Geol., Compte Rendu, viii session, pp. 749-755, 1901

643 —— The variations of glaciers, VI.

Jour. Geol., vol. 9, pp. 250-254, 1901.

This paper comprises a summary of the Fifth Annual report of the International Committee on glaciers.


645 **Richards** (Joseph W.). "Mohawkite."


Gives results of the author's chemical studies, which prove the existence of the species termed mohawkite and of another species for which the name ledouxite is proposed.
646 Rickard (Forbes). Notes on Nome, and the outlook for vein mining in that district [Alaska].
   Contains notes on the geology of the region and the occurrence of gold.

647 Rickard (T. A.). The Cripple Creek volcano [Colorado].
   Gives an account of the various stages of eruption in this volcano and compares it with volcanoes in other regions.

648 — The telluride ores of Cripple Creek [Colorado] and Kalgoorlie [Australia].
   Describes the characteristics of the ores of these regions.

   Am. Geol., vol. 28, pp. 269-270, with portrait, 1901.
   Gives a brief sketch of his life and work, and a list of publications.

   Describes the general character of the Cretaceous, Jurassic, and Triassic strata and the occurrence of vertebrate remains.

651 — The fore leg and pectoral girdle of Morosaurus. With a note on the genus Camarosaurus.

652 — The largest known dinosaur.
   Contains brief description of the skeleton obtained by a recent expedition of the Field Columbian Museum.

653 Ritter (Wm. E.). Some observations bearing on the probable subsidence during recent geologic times of the Island of Santa Catalina off the coast of southern California.

   Describes occurrence and crystallographic characters of the minerals.

655 Rogers (Austin F.). Mineralogical notes, No. 2.
   Describes crystallographic characters of calcite, galena, pyrite, topaz, leadhillite, iivarite, caledonite, barite, and celestite.

656 — The Pottawatomie and Douglas formations along the Kansas River.
   Gives lists of fossils from various localities.
657 Ropes (Leverett S.). [Corundum of North Carolina.]
Min. Ind., 1899, pp. 12-14, 1900.
Notes on occurrence.

Am. Geol., vol. 27, pp. 343-355, pl. 28, 1901.
Describes species of two little known groups of blastoids.

659 Ruedemann (Rudolf). Hudson River beds near Albany and their taxonomic equivalents.
Reviews previous work on these strata. Describes the lithologic and faunal characters at various localities in the region and discusses the geologic structure and correlation of the beds. Describes the characters of new species of fossils collected.

660 — Trenton conglomerate of Rysedorph Hill, Rensselaer County, N. Y., and its fauna.
N. Y. State Mus., Bull. 49, pp. 3-114, pls. A-B and 1-7, 1901.
Describes the stratigraphic relations and characters of the fauna.

661 Russell (Israel C.). Geology and water resources of Nez Perce County, Idaho. Part I.
Describes the pre-Tertiary terranes, the Columbia lava, the soils and the physiography of the region.

662 — Geology and water resources of Nez Perce County, Idaho. Part II.
U. S. Geol. Surv., Water-Supply and Irrigation Papers, No. 54, pp. 95-141, figs. 5-14, 1901.
Describes the character and occurrence of the water supply, building stones, and lignite. Includes a bibliography of artesian waters and a note concerning Portland cement.

663 Rutland (Joshua). Mammals and reptiles; or what was the Ice ages?
Describes their occurrence and characters in geologic times.

664 Rutley (Frank). Mineralogy.

665 Safford (J. M.). Classification of the geological formations of Tennessee.
Gives in tabular form a list of the geological formations of Tennessee and includes brief notes regarding them.
666 **Safford** (J. M.). Horizons of phosphate rocks in Tennessee.  
Describes the geologic relations of the various phosphate deposits.

Jour. Geol., vol 9, pp. 87-91, 1901.


669 — [Review of “Glacial sculpture of the Bighorn Mountains, Wyoming,” by F. E. Matthes.]  
Jour. Geol., vol. 9, pp. 465-466, 1901.

670 — Glacial work in the Western mountains in 1901.  
Jour. Geol., vol. 9, pp. 718-731, 1901.  
Describes the results of the work of several parties of students in various parts of western United States.

671 **Sardeson** (Frederick W.). Problem of the Monticuliporoidea. I.  
Jour. Geol., vol. 9, pp. 1-27, pl. A. and fig. 1, 1901.  
Describes the characters of various species of Trepostomata and discusses their affinities.

672 — Problem of the Monticuliporidea. II.  
Jour. Geol., vol. 9, pp. 149-173, pl. B, fig. 2, 1901.  
Describes the general characters of various species of Cryptostomata and discusses their affinities.

673 — Note on the western Tertiary.  
Contains notes on the occurrence of fossils as indicating the mode of formation of the strata.

674 — Fossils in the St. Peter sandstone.  

675 — Paleozoic fossils in the drift [Minnesota].  

676 — The lower Silurian formations of Wisconsin and Minnesota compared.  
677 Sardeson (Frederick W.). The range and distribution of the lower Silurian fauna of Minnesota, with descriptions of some new species.

Describes occurrence of irregular, hardened masses in the limestone and discusses their origin. Describes similar occurrences in other geologic horizons.

679 Schiotz (O. E.). Results of the pendulum observations and some remarks on the constitution of the earth’s crust.

680 Scholz (C.). [In discussion of paper by Charles Catlett on “Coal outcrops.”]

681 Schrader (F. C.) and Brooks (Alfred H.). Some notes on the Nome gold region of Alaska.
Describes the topography of the region, the occurrence of the placers, and the origin of the beach placers.

682 Schuchert (Charles). On the Helderbergian fossils near Montreal, Canada.
Am. Geol., vol. 27, pp. 245-253, figs. A-D, 1901.
Contains notes on the fossils and probable correlations of the St. Helens island faunas of New York. Figures two new species.

683 Scott (Dunkinfield Henry). Studies on fossil botany.
The Macmillan Co., N. Y., 533 pp., 1900.

684 Scott (W. B.). Historical geology.
Abstract of lecture delivered at the Wagner Institute, Philadelphia, Pa.

685 — Earth carrying.
Abstract of lecture delivered at the Wagner Institute, Philadelphia, Pa.

686 Seeley (Henry M.). Sketch of the life and work of Augustus Wing.
Am. Geol., vol. 28, pp. 1-8, pl. 1, 1901.
Describes the life of Augustus Wing and his work on the geology of Vermont.
687 Seeley (Henry M.). The geology of Vermont.
   The Vermonter, vol. 5, pp. 53–67, Feb., 1901. (Not seen.)


689 — Fossil plants in the Permian of Kansas.
   Describes occurrence of the plant remains at various localities.

690 Shaaf (Albert), Price (J. A.) and. Spy Run and Poinsett lake bottoms.
   See Price (J. A.) and Shaaf (A.), 627.

691 — Abandoned meanders of Spy Run Creek [Indiana].
   See Price (J. A.) and Shaaf (A.), 628.

692 Shaler (N. S.). Broad valleys of the Cordilleras.
   Discusses the origin and development of these valleys and the bearing of the evidence on the orographic features of the region.

693 Shattuck (George Burbank). The Pleistocene problem of the North Atlantic Coastal plain.
   Am. Geol., vol. 28, pp. 87–107, 1901.
   Reviews the opinions of various writers on these problems and gives the author's conclusions.

694 — Apparent unconformities during periods of continuous sedimentation.

   45 pp., 1900. (Not seen.) Boston, Mass.

696 Shimek (B.). Recent decline in the level of Lake Nicaragua.
   Am. Geol., vol. 28, pp. 396–398, 1901.
   Refers to a paper published in 1896 on the same subject.

697 — The loess of Iowa City and vicinity [Iowa].
   Am. Geol., vol. 28, pp. 344–358, 1901.
   Gives list of loess and recent fossils with notes on some of the species.

698 Siebenthal (C. E.). On the use of the term Bedford limestone.
   Discusses the use of the name in Ohio and Indiana and considers the Bedford of Indiana has priority.


701 — The Silver Creek hydraulic limestone of southeastern Indiana.
      Reviews the geologic literature regarding the region, describes the stratigraphic and paleontologic features and nomenclature of the Devonian formations, and gives an account of the economic uses of the limestone.

702 Simonds (Frederic W.). The minerals and mineral localities of Texas.
      Gives an account of the preparation of a list of Texas minerals and localities.

703 Sinclair (William J.). The discovery of a new fossil tapir in Oregon.
      Jour. Geol., vol. 9, pp. 702-707, fig. 1, 1901.
      Describes Protapirus robustus n. sp. from the John Day beds.

704 Slosson (E. E.), Knight (W. C.) and. Alkali lakes and deposits [Wyoming].
      See Knight (W. C.) and Slosson (E. E.), 451.

705 —— The Dutton, Rattlesnake, Arago, Oil Mountain, and Powder River oil fields [Wyoming].
      See Knight (W. C.) and Slosson (E. E.), 450.

706 Smith (Alva J.). The Americus limestone.
      Describes its distribution in Lyon County, Kansas, and its petrographic and faunal characters.

707 Smith (George Otis). A geological study of the Fox Islands, Maine.
      Describes the character and occurrence of the sedimentary and igneous rocks and the geologic history of the islands.

708 —— Geology and water resources of a portion of Yakima County, Washington.
      Describes the geographic and geologic features of the region and the water resources.
709 Smith (George Otis) and Willis (Bailey). The Clealum iron ores, Washington.
   Describes the character, occurrence and origin of the ores and the general geologic and structural feature of the region.

710 Smith (James Perrin). The border line between the Paleozoic and Mesozoic in western America.
   Jour. Geol., vol. 9, pp. 512-521, 1901.
   Discusses briefly the criteria by which geologic time divisions of the line between this Paleozoic and Mesozoic as influenced by the faunas of certain beds of Idaho and California and their relation to allied Asiatic and European faunas.

711 —— and Weller (Stuart). Prodromites, a new ammonite genus from the Lower Carboniferous.
   Jour. Geol., vol. 9, pp. 255-268, pls. 6-8, 1901.
   Discusses the occurrence of ammonites in upper Paleozoic rocks of the Mississippi Valley, and describes a new genus and two new species.

   Gives an account of the work of the Survey for the year, and discusses the character and relations of the surface formations of southern New Jersey.

713 Smyth (C. H., jr.). Geology of the crystalline rocks in the vicinity of the St. Lawrence River.
   Describes the gneiss and associated rocks of the region.

714 Sollas (W. J.). Evolutional geology.

715 Spalding (E. P.). The quicksilver mines of Brewster County, Texas.
   Contains notes on the character and occurrence of the ore.

716 Spencer (Arthur C.). The iron ores of Santiago, Cuba.
   Eng. & Mg. Jour., vol. 72, pp. 633-634, 6 figs., 1901.
   Describes the character and geologic relations of the ore bodies.

717 —— The physiography of the Copper River basin, Alaska.
   Contains abstract of paper read before the Geological Society of Washington.

718 —— See Cross (Whitman), 176.

719 Spencer (Joseph William Winthrop). On the geological and physical development of Antigua.
720 **Spencer** (Joseph William Winthrop). On the geological and physical development of Guadelupe.


721 —— On the geological and physical development of Anguilla, St. Martin, St. Bartholomew, and Sombrero.


722 —— On the geological and physical development of the St. Christopher chain and Saba Banks.


723 **Spurr** (Josiah Edward). Origin and structure of the Basin ranges.


Describes the structural features of the ranges in the Great Basin region and discusses their origin.


Jour. Geol., vol. 9, pp. 586-606, fig. 1, 1901.

Describes the character and occurrence of the variations of certain andesitic and rhyolitic rocks and gives chemical analyses.

725 **Stanton** (Timothy W.). [Report on Cretaceous fossils from the John Day Basin, Oregon.]

Univ. of Cal., Dept. of Geol., Bull., vol. 2, pp. 280-284, 1901.

Gives list of fossils with notes on some of the species and discusses the faunal relations.

726 —— Chondrodonta, a new genus of ostreiform mollusks from the Cretaceous, with descriptions of the genotype and a new species.


727 **Stearns** (Robert E. C.). Fossil land shells of the John Day region, with notes on related living species.


727a —— The fossil fresh-water shells of the Colorado desert, their distribution, environment, and variation.


728 **Stevens** (E. A.). An occurrence of limburgite in the Cripple Creek district [Colorado].


Describes the occurrence and character of this rock type.

729 **Stokes** (H. N.). On pyrite and marcasite.


Describes the uncertainty of the methods of distinguishing pyrite and marcasite and a method for the quantitative determination of the minerals when in mixture, and discusses the relations of these sulphides to those of copper.
730 Stokes (N. H.), Merrill (George P.) and. A new stony meteorite from Allegan, Michigan, and a new iron meteorite from Mart, Texas.
See Merrill (George P.) and Stokes (H. N.), 546.


732 Stone (George H.). Note on the minerals associated with copper in parts of Arizona and New Mexico.

733 —— Note on the extinct glaciers of New Mexico and Arizona.
Brief account of occurrence.

Eng. and Mg. Jour., vol. 72, p. 105, 1901.
Describes briefly the occurrence of copper ores.

735 Taff (Joseph A.). A comparison of the Ouachita and Arbuckle Mountain sections, Indian Territory.
Briefly describes sections of Paleozoic rocks.

736 —— Colgate Folio—Indian Territory.
Describes the geographic and topographic features, the general geologic relations, the character and occurrence of the Carboniferous, Neocene and Pleistocene strata, and the occurrence of coal.

737 Talmage (J. E.). A recent fault slip, Ogden Canyon, Utah.
Gives a brief account of the phenomena.


739 Tays (E. A. H.). Genesis of ore deposits.
Discusses article by M. W. Alderson on the same subject.

740 Tight (W. G.). Pre-Glacial drainage in southwestern Ohio.
Discusses recent article by A. M. Miller on the same subject.

741 Todd (James E.). River action phenomena.
Discusses the variations in phenomena of river action in time of flood and the formation of silt and loess deposits.
742 Todd (James E.). Some problems of the Dakota artesian system.

743 — Moraines and maximum diurnal temperature.
Describes certain glacial phenomena.

Describes the structure of the region and its general stratigraphic features.

745 — Perknite (lime-magnesia rocks).
Jour. Geol., vol. 9, pp. 507-511, 1901.
Describes the character and occurrence of a new rock type and gives chemical analyses of rocks included in this group.

746 — The mines of Esmeralda County, Nevada.
Mg. and Sci. Press, vol. 82, pp. 73-74, 1901.
Contains notes on the general geology of portions of the County.

Describes the physiography and drainage of the region and the character of the crystalline rocks.

U.

748 Udden (J. A.). Geology of Louisa County [Iowa].
Iowa Geol. Surv., vol. 11, pp. 58-126, pl. 4, fig. 1, 2 maps, 1901.
Describes the physiography, the character and distribution of the Carboniferous and Pleistocene deposits and the occurrence of economic products.

749 — Geologie of Pottawattamie County [Iowa].
Iowa Geol. Surv., vol. 11, pp. 202-277, pl. 6, figs. 13-15 and map, 1901.
Describes the physiography, the character and occurrence of the Carboniferous, Cretaceous, and Pleistocene strata and the occurrence of economic products.

Md. Geol. Surv., Eocene, pp. 116-122, pl. 16, 1901.

751 — Eocene Molluscoidea (Bryozoa).
752 **Upham (Warren).** Artesian wells in North and South Dakota.

753 — Pre-Glacial erosion in the course of the Niagara gorge, and its relation to estimates of post-Glacial time.
Am. Geol., vol. 28, pp. 235–244, 1901.
Gives the author's views of the glacial history of the region and discusses their bearing on estimates of post-Glacial time.

754 — The antiquity of the races of mankind.
Am. Geol., vol. 28, pp. 250–254, 1901.
Reviews the evidences indicating the pre-Glacial origin of man.

755 — [Review of "Iowa Geological Survey, volume 11."]
Am. Geol., vol. 28, p. 258, (½ p.), 1901.

756 — The Toronto and Scarboro drift series [Ontario].
Quotes Coleman's description of these beds and discusses the bearing of the evidences on the existence of interglacial epochs of moderate oscillations of the ice border.


758 **Van Hise (Charles R.).** Some principles controlling the deposition of ores.
This subject is discussed under the following general heads: Three zones of the lithosphere; the water content and openings in rocks; physico-chemical principles controlling the work of underground waters; general geologic work of underground waters; the precipitation of ores by ascending waters; precipitation of ores by ascending and descending waters combined; the association of certain ores; concentration; enrichment and diminution of richness in depth; special factors affecting the concentration of ores, and the classification of ore deposits.

759 — The iron-ore deposits of the Lake Superior region.
Describes the general stratigraphy and occurrence of iron ores in the several districts of the Lake Superior region. The Mesabi district is by C. R. Van Hise and C. K. Leith. The Vermillion iron-bearing district is by C. R. Van Hise and J. Morgan Clements.

760 — The geology of ore deposits.
Discusses the evidences that metallic ores and gangue are deposited by underground waters.
761 **Van Hise** (Charles R.). [Discussion of "Ice ramparts," by E. R. Buckley].
Compares the phenomena of ice deformation with those of crustal deformation.

762 **Van Ingen** (Gilbert). The Siluric fauna near Batesville, Arkansas, I.
School of Mines Quart., vol. 22, pp. 318-328, fig. 1, 1901.
Describes the geologic relations of the strata. Includes a bibliography.

763 —— The Siluric fauna near Batesville, Arkansas.
School of Mines Quart., vol. 23, pp. 34-74, figs. 9-22, 1901.
Describes the characters of the various species collected.

Contains considerable data on the Paleozoic strata and faunas of New Jersey.

765 **Vaughan** (T. Wayland). Eocene Coelenterata.
Md. Geol. Surv., Eocene, pp. 222-232, pl. 61, 1901.

766 —— Some fossil corals from the elevated reefs of Curacao, Aruba, and Bonaire.
Sammlungen d. Geol. Reichs-Museum, Leiden, ser. 11, Bd. 11, Heft 1, 1901.

766a —— The stony corals of the Porto Rican waters.
In addition to describing recent species of corals, gives notes on fossil species from the United States and the West Indies.

767 —— Shell Bluff, Georgia, one of Lyell's original localities.
Contains abstract of paper read before the Geological Society of Washington.

768 —— Review of recent papers on Bahaman corals.

769 —— The copper mines of Santa Clara province, Cuba.
Eng. & Mg. Jour., vol. 72, pp. 814-816, 4 figs., 1901.
Describes the geology and occurrence and character of the ore bodies.

770 **Vaux** (George) and (William S., jr.). Observations made in 1900 on glaciers in British Columbia.
Notes on movements of the glaciers.
Walcott (Charles D.). Cambrian Brachiopoda; Obolella subgenus Glyptias; Bicia; Obolus, subgenus Westonia; with description of new species.

The work of the United States Geological Survey in relation to the mineral resources of the United States.
Gives a general account of the work of the U. S. Geological Survey in the development of the mineral resources of the country.

Gives an account of the work of the U. S. Geological Survey for the year.

Sur les formations Pré-Cambriennes fossilifères.
Int. Cong. Geol., Compte Rendu, viii session, pp. 299-312, 1901.
Describes the lithologic and faunal characters of the pre-Cambrian strata in various parts of the United States.

Walker (B. E.). List of the published writings of Elkanah Billings.


Ward (Lester F.). Geology of the Little Colorado Valley [Arizona].
Describes the character and occurrence of the several subdivisions of the Mesozoic strata of the region.

[Review of "Sur quelques Microorganismes des combustibles fossiles," by B. Renault.]

The petrified forests of Arizona.


782 — 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.), 603.

783 Washington (Henry S.). The foyaite-ijolite series of Magnet Cove [Arkansas]; a chemical study in differentiation. 1.
Jour. Geol., vol. 9, pp. 607-622, 1901.
Comprises a study of the chemical composition of several rock types and a discussion of their relations.

784 — The foyaite-ijolite series of Magnet Cove [Arkansas]; a chemical study in differentiation. II.
Describes the petrographic characters of the rocks and compares them with similar rocks from other regions. Discusses differentiation in laccolithic magmas.

785 — The rocks of Lake Winnepesaukee, New Hampshire
Abstract: Am. Geol., vol. 27, p. 44 (½ p.), 1901.
Contains brief notes on the rocks.

786 — A chemical study of the glaucophane schists.
Abstract: Am. Geol., vol. 27, pp. 184-185, 1901.
Describes the microscopic and chemical characters of these schists from several foreign countries and from western United States.

787 Watson (Thomas Leonard). The granitic rocks of Georgia and their relationships.
Describes the microscopic and chemical and mineralogic characters of the varieties of granite and discusses the evidence of their intrusive origin.

788 — The Georgia bauxite deposits; their chemical constituents and genesis.
Am. Geol., vol. 28, pp. 25-45, pl. 7, 1901.
Describes the general geology of the bauxite area and the occurrence, geologic position, and chemical composition of the ore and discusses its origin.

789 — On the origin of the phenocrysts in the porphyritic granites of Georgia.
Jour. Geol., vol. 9, pp. 97-122, figs. 1-6, 1901.
Describes the characters of the granites of the several areas studied, their chemical composition, and the genetic relationship of phenocryst to groundmass.
Jour. Geol., vol. 9, pp. 737-739, 1901.

791 —— Weathering of granitic rocks of Georgia.
Describes the megascopic, microscopic, and chemical character of the granite of the State and the phenomena of their weathering.

792 Watson (R. Lind). Auriferous deposits of Wreck Bay, Jordan River, and other localities of Vancouver Island [Canada].
Describes placers of the region.

793 Weatherby (W. J.). The Mogollon range, New Mexico.
Describes the general geology and mineral resources of the region.

794 Weed (Walter Harvey). The enrichment of gold and silver veins.
Discusses the genesis of rich ore bodies occurring near ground water level and of those found in deep mine workings and the chemical reactions which have taken place during the process of ore deposition. Describes the author’s observations and those of other geologists in various mines.

795 —— Types of copper deposits in the southern United States.
Describes the character and occurrence of copper ores in certain districts and discusses relations of the ores of the regions with these type deposits.

796 —— Notes on the Carolina gold deposits.
Eng. and Mg. Jour., vol. 72, p. 494, 1901.
Brief notes on the character of the ores.

797 —— The El Paso tin deposits [Texas].
Describes the general geology of the region and the occurrence and character of the ore-bearing veins.

798 —— and Firsson (L. V.). Geology of the Shonkin sag and Palisade Butte laccoliths in the Highwood Mountains of Montana.
Describes the physiography of the region, the occurrence and character of the laccoliths and the chemical characters of the shonkinite and syenite.
799 **Weed** (Walter Harvey) and **Pirsson** (L. V.). Missourite, a new leucite rock from the Highwood Mountains of Montana.

800 **Weeks** (Fred Boughton). An occurrence of tungsten ore in eastern Nevada.
Abstract: Eng. and Mg. Jour., vol. 72, pp. 8–9, 1901.

801 **Weller** (Stuart). Correlation of the Kinderhook formations of southwestern Missouri.
Jour. Geol., vol. 9, pp. 130–148, 1901.
Reviews recent correlation of these strata and describes the occurrence and faunas of the several formations which make up the Kinderhook group.

Jour. Geol., vol. 9, pp. 278–279, 1901.


804 — Kinderhook faunal studies. III. The faunas of beds No. 3 to No. 7 at Burlington, Iowa.
Describes species collected from the various beds and discusses the correlations.

805 — A preliminary report on the Paleozoic formations of the Kittatinny Valley in New Jersey.
N. J. Geol. Surv., Ann. Rept. for 1900, pp. 1–8, 1901.
Describes the character and occurrence of the subdivisions of the Cambrian and Ordovician strata in New Jersey.

806 — **Kummell** (Henry B.) and. Paleozoic limestones of Kittatinny Valley, New Jersey.
See Kummel (H. B.) and Weller (S.), 457.

807 — **Smith** (James Perrin) and. Prodromites, a new ammonite genus from the Lower Carboniferous.
See Smith (J. P.) and Weller (Stuart), 711.

808 **Wells** (Horace L.). Sperrylite, a new mineral.

809 — On the composition of pollucite and its occurrence at Hebron, Me.
809a White (David). Two new species of Algae from the Upper Silurian of Indiana.

810 — Age of the coals at Tipton, Blair County, Pennsylvania.
Geol. Soc. Am., Bull., vol. 12, pp. 473-477, 1901. Describes the occurrence, character and structure of the strata associated with the coals and discusses their age as indicated by the fossil flora.

811 — [Review of "Étude sur la flore fossile du basin houiller d'Heracleé (Asie Mineure)" by R. Zeiller.]
Jour. Geol., vol. 9, pp. 192-198, 1901.

812 — Mr. Lacoe's relation to science.

813 — The Canadian species of the genus Whittleseyella and their systematic relations.

814 — Some paleobotanical aspects of the Upper Paleozoic in Nova Scotia.


816 — Geology of West Virginia. [Paper read before the International Mining Congress, Boise, Idaho, June, 1901.]

817 White (Mark). Geology of the Glass Mountains of western Oklahoma.


819 Whiteaves (J. F.). Description of a new species of Unio from the Cretaceous rocks of the Nanaimo coal field. Vancouver Island.
Ottawa Nat., vol. 14, pp. 177-179, 1 fig., 1901.
820 **Whiteaves** (J. F.). Note on a supposed new species of Lytoceras from the Cretaceous rocks at Denman Island in the Strait of Georgia [Canada].

821 **Whitehead** (Cabell), **Chatard** (T. M.), and. An examination of the ores of the Republic Mine, Washington.
See Chatard (T. M.) and Whitehead (C.), 125.

822 **Whitfield** (R. P.) assisted by **Hovey** (E. O.). Catalogue of the types and figured specimens in the paleontological collection of the geological department, American Museum of Natural History; Lower Carboniferous to Pleistocene inclusive.

823 **Whitfield** (R. P.). Note on a very fine example of Helicoceras stevensoni preserving the outer chamber.

Continues the description of the author's studies of the fructification of Cycadeoidea, which appeared in the American Journal of Science for March, 1899.

825 **Williams** (E. H., jr.). The alleged Parker channel. [Pennsylvania.]
Describes abandoned channel of Allegheny River.

826 **Williams** (Henry Shaler). The discrimination of time values in geology.
Jour. Geol., vol. 9, pp. 570–585, 1901.
Discusses the criteria upon which the classification of strata should depend and proposes a plan of a biochronic classification and nomenclature.

Gives brief summary of questions in dispute.


830 Willmott (A. B.). The Michipicoten Huronian area.
Am. Geol., vol. 28, pp. 14-19, pl. 8, 1901.
Describes the occurrence of the igneous and sedimentary rocks of the region and discusses the stratigraphic succession and age of the sediments.

831 Willis (Bailey). Paleozoic Appalachia or the history of Maryland during Paleozoic time.
Md. Geol. Surv., Special Publication, vol. 4, pt. 1, pp. 1-93, pls. i-xii, fig. 1, 1900.
Describes the processes of erosion, sedimentation and deformation, and discusses the Paleozoic history of Maryland and adjacent States.

832 — Individuals of stratigraphic classification.
Jour. Geol., vol. 9, pp. 557-569, 1901.
Discusses the discrimination of formations by lithologic criteria and the determination of faunal and time divisions.

833 Thomas Benton Brooks.
Gives an account of his life and geologic researches.

834 — Oil of the northern Rocky Mountains.
Eng. and Mg. Jour., vol. 72, pp. 782-784, 3 figs., 1901.
Describes the stratigraphy and structure of the region and the probable occurrence of oil.

835 — Smith (George Otis) and. The Clealum iron-ores, Washington.
See Smith (G. O.) and Willis (B.), 709.

836 Williston (S. W.). The dinosaurian genus Creosaurus, Marsh.
Reviews previous descriptions and describes new material.

837 — A new turtle from the Kansas Cretaceous.
Describes Porthochelys laticeps, n. gen. et sp.

Describes the petrographic characters of the crystalline rocks and the glacial phenomena of the region. Includes a bibliography and geologic map.

839 — Physical geology of central Ontario.
Describes the character of the pre-sedimentary floor of the region, the characters of the Paleozoic series, its post-Paleozoic history, and the glacial phenomena.


Am. Geol., vol. 28, pp. 189-200, 1901.
Reviews paper by Duparc and Mrazec.

Edward Waller Claypole.
Gives a sketch of the life of Prof. Claypole.

The origin of Australian iron ores.
Am. Geol., vol. 18, pp. 248-250, 1901.
Reviews paper by J. B. Jaquet on "The iron-ore deposits of New South Wales," and compares them with certain deposits in the State of Washington.

Am. Geol., vol. 28, pp. 319-324, 1901.

Fundamental changes in the Archean and Algonkian, as understood by Prof. Van Hise, of the United States Geological Survey.
Am. Geol., vol. 28, pp. 385-388, 1901.
Reviews a recent paper by Prof. Van Hise.

Withrow (James R.), Hamilton (S. Harbert) and. The progress of mineralogy in 1899, an analytical catalogue of the contributions to science during the year.
See Hamilton (S. H.) and Withrow (J. R.), 337.

Wood (Elvira). Marcellus (Stafford) limestones of Lancaster, Erie County, N. Y.
N. Y. State Mus., Bull. No. 49, pp. 139-181, fig. 1, pl. 9, 1901.
Describes their stratigraphic relations and lithologic and faunal characters.

A new crinoid from the Hamilton of Charlestown, Indiana.
Describes Gemmaceocrinus carinatus n. sp.

Woodworth (Jay Backus). Original micaceous cross-banding of strata by current action.
Am. Geol., vol. 27, pp. 281-283, figs. 1-2, 1901.
Describes the phenomena occurring in glacial sand of Massachusetts and refers to descriptions of somewhat similar occurrences.
858 Woodworth (J. Backus). Pleistocene geology of portions of Nassau of Queens County and Borough [New York].
Describes the physiography and character and occurrence of the Pleistocene strata of the region. Includes a summary of glacial history and bibliography.

859 Woolman (Lewis). Artesian wells. [New Jersey.]
Gives sections of many artesian wells.

Describes the characters of the skull and the relations of the Amphicyon group.

861 — Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum.
Am. Jour. Sci., 4th ser., vol. 11, pp. 333-348, pl. v, figs. 1-6, pp. 437-450, pl. vi, figs. 7-17, 1901.
Discusses the relations of the Carnivora and Creodonta, and describes the characters of some forms of Canidae, including a few new species.

862 — Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum.
Describes Viverravus Marsh, V. gracilis Marsh, minutus n. sp., and Oödecetes herpestoides n. gen. et sp.

863 — Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum.
Continues description of Oödecetes herpestoides n. sp., and describes Triacodon fallax Marsh, Ziphacodon rugatus Marsh, Harpalodon sylvestris Marsh, Aeluurotherium latidens Marsh, and Ae. bicuspis n. sp.

864 — Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum.
Gives the important characters by which the Creodonta are distinguished from the Carnassidentia, and describes Harpagolestes macrocephalus n. gen. et sp., and Dromocyon vorax Marsh.

865 —— Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum.
Continuous description of Dromycyon vorax Marsh.

866 Wright (G. F.). Geology and the deluge.
McClure's Mag., vol. 17, pp. 124-139, June, 1901. (Not seen.)
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