

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 1902

BY

FRED BOUGHTON WEEKS



WASHINGTON
GOVERNMENT PRINTING OFFICE
1903

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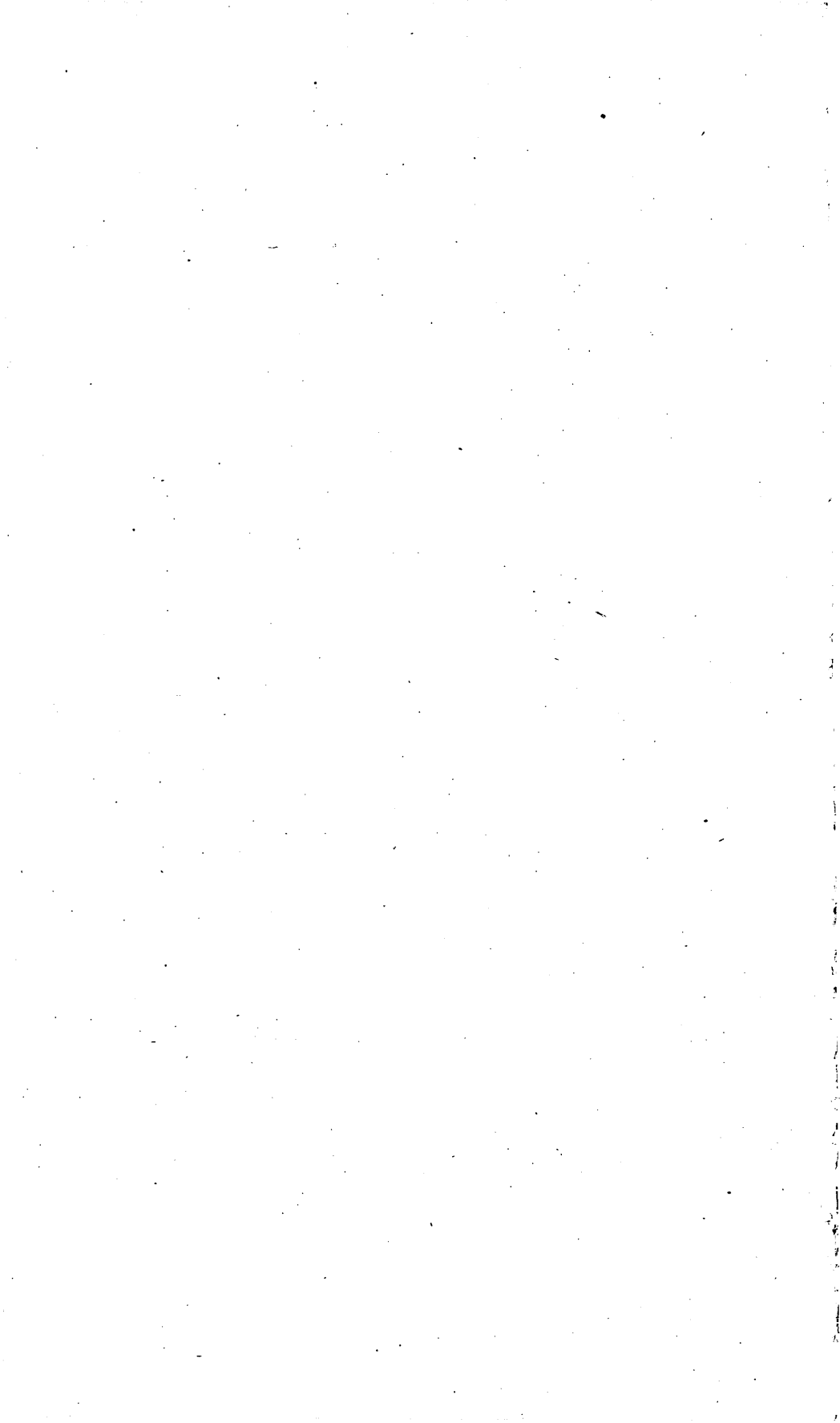
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LETTER OF TRANSMITTAL.

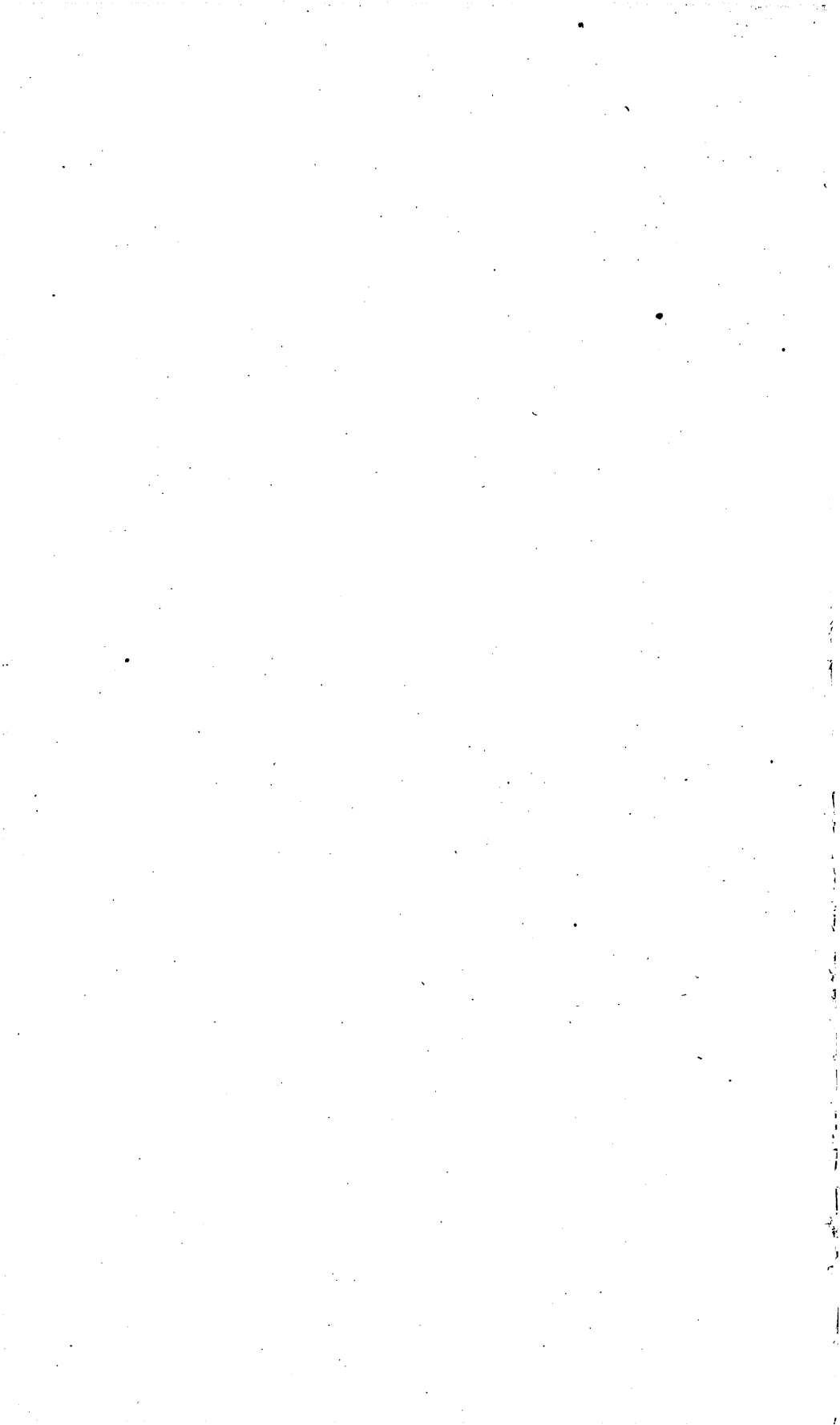
DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., October 20, 1903.

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 1902, and to request that it be published as a bulletin of the Survey.

Very respectfully,

F. B. WEEKS.

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



BIBLIOGRAPHY AND INDEX OF NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY, AND MINERALOGY FOR THE YEAR 1902.

By FRED BOUGHTON WEEKS.

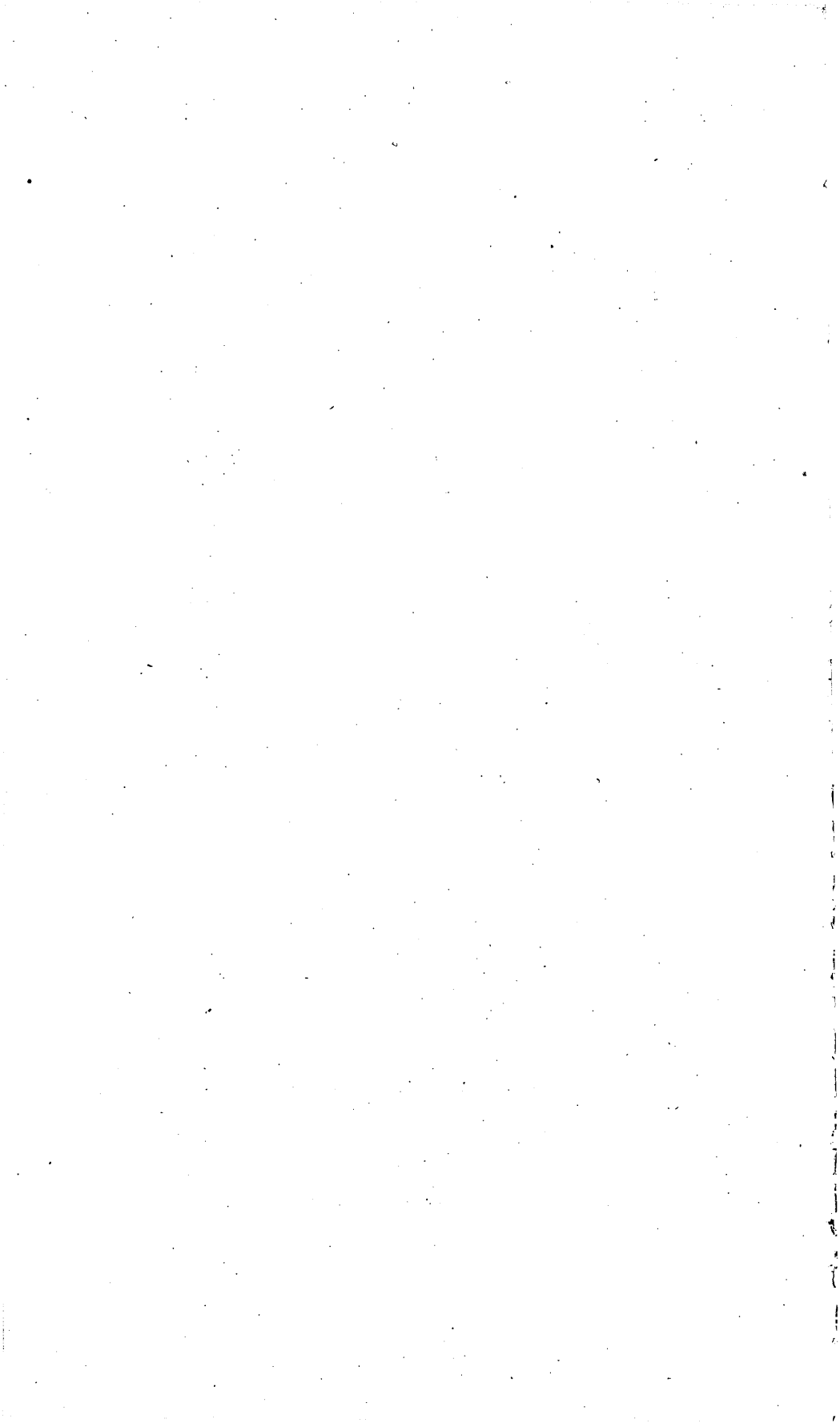
INTRODUCTION.

The arrangement of the material of the Bibliography and Index for 1902 is similar to that adopted for the previous publications (Bulletins Nos. 130, 135, 146, 149, 156, 162, 172, 188, 189, and 203). 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.

Mr. John M. Nickles has assisted in the compilation of this work, and credit is due him for its careful preparation and completeness



LIST OF PUBLICATIONS EXAMINED.

- American Academy of Arts and Sciences: Proceedings, vol. 37, nos. 4, 5, 13-23, and vol. 38, nos. 1-15, 1902. Boston, Mass.
- American Association for the Advancement of Science: Proceedings, vol. 51, 1902.
- American Geographical Society: Bulletin, vol. 34, 1902. New York, N. Y.
- American Geologist, vols. 29 and 30, 1902. Minneapolis, Minn.
- American Institute of Mining Engineers: Transactions, vols. 31 and 32, 1902. New York, N. Y.
- American Journal of Science: 4th series, vols. 13 and 14, 1902. New Haven, Conn.
- American Museum of Natural History: Bulletin, vol. 16; vol. 17, pts. 1 and 2, and vol. 18, pt. 1, 1902; Memoirs, vol. 1, pt. 7, 1901. New York, N. Y.
- American Naturalist, vol. 36, 1902. Boston, Mass.
- American Paleontology: Bulletins, nos. 14, 15, 1902. Ithaca, N. Y.
- American Philosophical Society: Proceedings, vol. 41, nos. 168-171; Transactions, new series, vol. 20, pt. 3, 1902. Philadelphia, Pa.
- Annales des Mines: Memoires, 6th series, vols. 1 and 2, 1902. Paris, France.
- Annals and Magazine of Natural History: 7th series, vols. 9 and 10, 1902. London, England.
- Appalachia, vol. 10, no. 1, 1902. Boston, Mass.
- Association of Engineering Societies: Journal, vol. 38, 1902. Philadelphia, Pa.
- Boston Society of Natural History: Proceedings, vol. 30, nos. 3-7, 1902. Boston, Mass.
- Botanical Gazette, vols. 32 and 33, 1902. Chicago, Ill.
- California Academy of Sciences: Proceedings, 3d series, vol. 2, no. 1, 1902. San Francisco, Cal.
- California, University of, Department of Geology: Bulletin, vol. 2, no. 12, and vol. 3, nos. 1-6, 1902. Berkeley, Cal.
- Canada Geological Survey: New series, vol. 12, 1902; Summary Reports for 1900 and 1901; Contributions to Paleontology, vol. 3, pt. 2, 1902. Ottawa, Canada.
- Canada Royal Society: Proceedings and Transactions, 2d series, vol. 12, 1902. Ottawa, Canada.
- Canadian Institute: Transactions, vol. 7, pt. 2, 1902. Toronto, Canada.
- Canadian Mining Institute: Journal, vol. 5, 1902. Ottawa, Canada.
- Canadian Mining Review, vol. 21, 1902. Ottawa, Canada.
- Canadian Record of Science, vol. 8, nos. 7 and 8, 1902. Montreal, Canada.
- Carnegie Museum: Annals, vol. 1, 1902; Memoirs, vol. 1; nos. 3 and 4, 1902. Pittsburgh, Pa.
- Centralblatt für Mineralogie, Geologie und Palæontologie, nos. 1-24, 1902. Stuttgart, Germany.
- Chicago Academy of Sciences, Natural History Survey: Bulletin, no. 5, 1902. Chicago, Ill.
- Cincinnati Society of Natural History: Journal, vol. 20, nos. 2 and 3, 1902. Cincinnati, Ohio.
- Colorado Mining Bureau: Bulletin, no. 5; Report, 1902. Denver, Colo.

- Columbia University, Geological Department: Contributions, vol. 10, nos. 81-89, 1902. New York, N. Y.
- Connecticut Academy of Arts and Sciences: Transactions, vol. 11, pts. 1 and 2, 1902. New Haven, Conn.
- Denison University, Scientific Laboratory: Bulletin, vol. 12, articles 1-4, 1902. Granville, Ohio.
- Elisha Mitchell Scientific Society: Journal, 18th year, pt. 1, 1902. Chapel Hill, N. C.
- Engineering and Mining Journal, vols. 73 and 74, 1902. New York, N. Y.
- Engineering Magazine, vol. 22, nos. 4-6; vol. 23, and vol. 24, nos. 1-3, 1902. New York, N. Y.
- Engineers Club of Philadelphia: Proceedings, vol. 19, 1902. Philadelphia, Pa.
- Field Columbian Museum, Geological Series, vol. 1, no. 11, 1902. Chicago, Ill.
- Franklin Institute: Journal, vols. 153 and 154, 1902. Philadelphia, Pa.
- Geological Magazine, new series, decade 4, vol. 9, 1902. London, England.
- Geological Society of America: Bulletin, vol. 13, 1902. Rochester, N. Y.
- Geologists' Association: Proceedings, vol. 17, pts. 6-10, 1902. London, England.
- Georgia Geological Survey: Bulletin, no. 8, no. 9-A, 1902. Atlanta, Ga.
- Greene (George K.): Contributions to Indiana paleontology, pts. 9 and 10, 1902. New Albany, Ind.
- Hamilton Scientific Association: Journal and Proceedings, no. 18, 1902. Hamilton, Ontario.
- Harriman Alaska Expedition, 2 vols., 1902. New York, N. Y.
- Harvard College, Museum of Comparative Zoology: Bulletin, vol. 38, nos. 5-8: vol. 39, nos. 1-5; vol. 40, nos. 2, 3; and vol. 41, no. 1, 1902. Cambridge, Mass.
- Hayes (C. Willard), Vaughan (T. Wayland), and Spencer (Arthur C.): Report on a geological reconnaissance of Cuba. 123 pp., 29 pls., 17 figs., 1901.
- Indiana Academy of Science: Proceedings for 1901, 1902. Indianapolis, Ind.
- Institution of Mining and Metallurgy: Transactions, vol. 10, 1902. London, England.
- Institution of Mining Engineers: Transactions, vol. 18, 1899-1900; vol. 19, 1900-1901; vol. 20, 1900-1902; vol. 21, 1901-1903; vol. 22, pts. 1-4, 1901; and vol. 23, pts. 1-5, 1902. Newcastle-upon-Tyne, England.
- Iowa Academy of Sciences: Proceedings for 1900, vol. 8, 1901; Proceedings for 1901, vol. 9, 1902. Des Moines, Iowa.
- Iowa Geological Survey: Annual Report, vol. 12, 1902. Des Moines, Iowa.
- Iowa State University, Laboratory of Natural History: Bulletin, vol. 5, no. 3, 1902. Iowa City, Iowa.
- Johns Hopkins University: Circulars, nos. 155-160, 1902. Baltimore, Md.
- Journal of Geography, vol. 1, 1902. Lancaster, Pa.
- Journal of Geology, vol. 10, 1902. Chicago, Ill.
- Kansas University Science Bulletin, vol. 1, 1902. Lawrence, Kans.
- Lake Superior Mining Institute: Proceedings, vol. 1, 1893-vol. 7, 1901. Ishpeming, Mich.
- Liverpool Geological Society: Proceedings, vol. 9, pt. 2, 1902. Liverpool, England.
- London Geological Society: Quarterly Journal, vol. 58, 1902. London, England.
- Louisiana State Experiment Stations: Geology and Agriculture, pts. 1-4; 6, 1902. Baton Rouge, La.
- Manchester Geological Society: Transactions, vol. 27, pts. 8-17, 1902. Manchester, England.
- Maryland Geological Survey: vol. 4, 1902; Garrett County, 1902; Cecil County, 1902. Baltimore, Md.
- Mexico, Instituto Geologico: Bulletin, no. 16, 1902. City of Mexico.
- Michigan Geological Survey: Annual Report for 1901, 1902; vol. 8, 1902. Lansing, Mich.

- Michigan Miner, vol. 3, 1901, and vol. 4, 1902. Saginaw, Mich.
- Mines and Minerals, vol. 22, nos. 6-12, and vol. 23, nos. 1-3, 1902. Scranton, Pa., and Denver, Colo.
- Mining and Scientific Press, vols. 84 and 85, 1902. San Francisco, Cal.
- Minnesota Geological and Natural History Survey: Final Report, vol. 6, 1901. Minneapolis, Minn.
- Mojsisovics (E. V.) and Neumayr (O. M.). Beiträge zur Paleontologie und Geologie Österreich-Ungarns und des Orients, band 14, hefte 1-4, 1902. Wien und Leipzig.
- National Geographic Magazine, vol. 13, 1902. Washington, D. C.
- Nature, vol. 66, 1902. London, England.
- Nautilus, vol. 15, nos. 9-12, 1902. Philadelphia, Pa.
- Neues Jahrbuch für Mineralogie, Geologie und Paleontologie (except abstracts), band 1, hefte 1-3 and band 2, hefte 1-3, 1902; Beilage band 15, hefte 1-3, 1902. Berlin, Germany.
- New Brunswick Natural History Society: Bulletin, no. 19 (vol. 4, pt. 4), 1901, and no. 20 (vol. 4, pt. 5), 1902. St. John, New Brunswick.
- New Jersey Geological Survey: Annual Report for 1901, and Final Report, vol. 5, 1902. Trenton, N. J.
- New York Botanical Garden: Bulletin, vol. 2, no. 7, 1902; Contributions, vol. 1, 1902. New York, N. Y.
- New York State Museum: Bulletins, nos. 44, 50-59, 1902; 54th Annual Report, 4 vols. (includes 20th Report of the State geologist), 1902. Albany, N. Y.
- North Carolina Geological Survey: Economic Paper, no. 6, 1902. Raleigh, N. C.
- North Dakota Geological Survey: 2d Biennial Report, 1902. Grand Forks, N. Dak.
- Nova Scotian Institute of Science: Proceedings and Transactions, vol. 10, part 3, 1902. Halifax, Nova Scotia.
- Ohio State Academy of Science: Annual Reports, 1st, 1893-10th, 1902; Special Papers, nos. 1, 1899-4, 1901. Columbus, Ohio.
- Oklahoma Geological Survey: Advance Bulletin of 1st Biennial Report [1902].
- Ontario Bureau of Mines: Report for 1902. Toronto, Canada.
- Ottawa Naturalist, vol. 15, nos. 3, 10-12, and vol. 16, nos. 1-9, 1902. Ottawa, Canada.
- Paleontographica, band 49, hefte 1-3, 1902. Stuttgart, Germany.
- Philadelphia Academy of Natural Science: Proceedings, vol. 54, pts. 1-3, 1902. Philadelphia, Pa.
- Plant World, vol. 5, 1902. Washington, D. C.
- Popular Science Monthly, vol. 60, nos. 3-6; vol. 61, nos. 1-6; and vol. 62, nos. 1-2, 1902. New York, N. Y.
- Rochester Academy of Science: Proceedings, vol. 4, pp. 65-88, 1901-1902. Rochester, N. Y.
- St. Louis Academy of Science: Transactions, vol. 12, 1902. St. Louis, Mo.
- School of Mines Quarterly, vol. 23, nos. 2-4, 1902. New York, N. Y.
- Science, new series, vols. 15 and 16, 1902. New York, N. Y.
- Scientific American, vols. 86 and 87, 1902. New York, N. Y.
- Scientific American Supplement, vols. 53 and 54, 1902. New York, N. Y.
- Smithsonian Institution: Annual Report for 1901, 1902; Miscellaneous Collections, vols. 40 and 41, 1902. Washington, D. C.
- Sociedad Científica "Antonio Alzate," Memorias y Revista, vol. 16, 1901; vol. 17 and vol. 18, nos. 1-2, 1902. City of Mexico.
- Società Geologica Italiana: Bulletin, vol. 20, 1901. Rome, Italy.
- Société Géologique de Belgique: Annals, vol. 28, 1901, and vol. 29, 1902. Liege, Belgium.
- Société Géologique de France: Bulletin, 4th series, vol. 2, 1902. Paris, France.
- South Dakota Geological Survey: Bulletin, no. 3, 1902. Vermilion, S. Dak.
- South Dakota School of Mines: Bulletin, nos. 5 and 6, 1902. Rapid City, S. Dak.

- Staten Island Natural Science Association: Proceedings, vol. 8, nos. 13-19, 1902. Staten Island, N. Y.
- Stone, vols. 24 and 25, nos. 1-3, 1902. New York, N. Y.
- Technology Quarterly, vol. 15, 1902. Boston, Mass.
- Texas Academy of Science: Transactions, vol. 4, pt. 2, nos. 1-9, 1902. Austin, Tex.
- Texas University Mineral Survey: Bulletin, nos. 2, 3, and 4, 1902. Austin, Tex.
- Toronto University Studies: Geological series, no. 1, 1900, and no. 2, 1902. Toronto, Ontario.
- Torrey Botanical Club: Bulletin, vol. 29, 1902. Lancaster, Pa.
- United States Geological Survey: 21st Annual Report, pt. 7, 1901; 22d Annual Report, pts. 2-4, 1902; 23d Annual Report, 1902. Monograph 41, 1902. Professional Papers, nos. 1-8, 10, 1902. Bulletins, nos. 177, 179, 183, 187-204, 207, 1902. Geologic Atlas of the United States, Folios 76-85, 1902. Water-Supply Papers, nos. 57-74, 1902. Mineral Resources for 1901, 1902. Washington, D. C.
- United States National Museum: Annual Report for 1900, 1902; Proceedings, vol. 24, pp. 308-971; vol. 25, pp. 1-766, and vol. 26, pp. 1-412, 1902. Washington, D. C.
- Vermont Geological Survey: Report of the State geologist, 1902. Burlington, Vt.
- Washington Academy of Sciences: Proceedings, vol. 4, 1902. Washington, D. C.
- Washington Geological Survey: vol. 1, Annual Report for 1901, 1902. Olympia, Wash.
- Washington Philosophical Society: Bulletin, vol. 14, pp. 179-204, 1902. Washington, D. C.
- West Virginia Geological Survey: Bulletin, no. 1, 1901. Morgantown, W. Va.
- Wisconsin Geological and Natural History Survey: Bulletin no. 8, 1902. Madison, Wis.
- Wisconsin Natural History Society: Bulletin, new series, vol. 1, 1901; vol. 2, no. 1, 1902. Milwaukee, Wis.
- Wyoming Historical and Geological Society: Proceedings and Collections, vol. 7, 1902. Wilkesbarre, Pa.
- Wyoming University, School of Mines: Petroleum series, Bulletin, no. 5, 1902; Experiment Station, Bulletin, nos. 51-53, 1902. Laramie, Wyo.
- Yorkshire Geological and Polytechnic Society: Proceedings, new series, vol. 14, pt. 3, 1902. Leeds, England.
- Zeitschrift der Deutschen Geologischen Gesellschaft, band 54, hefte 1-3, 1902. Berlin, Germany.
- Zeitschrift für praktische Geologie, 1902, hefte 1-12 (except abstracts). Berlin, Germany.

BIBLIOGRAPHY.

A.

- 1 **Abbe** (Cleveland, Jr.). The physiography of Garrett County [Maryland].
Md. Geol. Surv., Garrett Co., pp. 27-54, pls. i-iv, 1902.
Describes the topographic and drainage features of the county, and discusses its physiographic history.
- 2 **Adams** (Charles C.). Post-Glacial origin and migrations of the life of the northeastern United States.
Jour. Geol., vol. 10, pp. 303-310, 1 fig., and pp. 352-357, 1902.
- 3 **Adams** (Frank Dawson). [In discussion of "The origin of ore-deposits."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 966-967, 1902.
- 4 — In memoriam—Sir John William Dawson.
Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 7, sect. iv, pp. 3-14, 1901.
Gives an account of his life and work.
- 5 — Haliburton and Bancroft areas, Ontario.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 145-148, 1902.
Describes the author's field work in this region.
- 6 — and **Nicolson** (John T.). An experimental investigation into the flow of marble.
Can. Rec. Sci., vol. 8, pp. 426-436, 1902.
Gives a summary of the authors' investigations.
- 7 **Adams** (George I.). Physiography and geology of the Ozark region.
U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 69-94, pls. vii-ix, figs. 3-5, 1901.
Describes physiographic features, and character and occurrence of igneous rocks and pre-Cambrian, Cambrian, Ordovician, Silurian, Devonian, and Carboniferous strata, and the geologic structure of the region.
- 8 — Geology and water resources of the Patrick and Goshen Hole quadrangles in eastern Wyoming and western Nebraska.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 70, 50 pp., 11 pls., 4 figs., 1902.
Describes geologic structure and physiographic features.

- 9 **Adams** (George I.). Physiographic divisions of Kansas.
Geol. Soc. Am., Bull., vol. 34, pp. 89-104, figs. 1-2, 1902.
Describes the characteristics of the several physiographic divisions of the region.
- 10 — Stratigraphic relations of the Red Beds to the Carboniferous and Permian in northern Texas.
Abstract: Science, new ser., vol. 16, p. 1029, 1902.
- 11 — Lithologic phases of the Pennsylvanian and Permian of Kansas, Indian Territory, and Oklahoma.
Abstract: Science, new ser., vol. 15, pp. 545-546, 1902.
- 12 — Note on a Tertiary terrane new in Kansas geology.
Am. Geol., vol. 29, pp. 301-303, 1 fig., 1902.
Describes the occurrence and character of the beds.
- 13 **Aguilar y Santillán** (Rafael). Bibliography of Mexican geology and mining.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 605-680, 1902.
- 14 **Aguilera** (José G.). The geographical and geological distribution of the mineral deposits of Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 497-520, 1902.
Describes the occurrence of mineral deposits.
- 15 **Alden** (William C.). Chicago Folio, Illinois-Indiana.
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 81, 1902.
Describes geographic and topographic features, the general geologic relations, the occurrence and character of strata of Cambrian, Silurian, Devonian and Quaternary age, and the economic resources, chiefly building stones.
- 16 **Ami** (Henry M.). Bibliography of Sir John William Dawson.
Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 7, sect. iv, pp. 15-44, 1901.
- 17 — Bibliography of Canadian geology and paleontology for the year 1900.
Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 7, sect. iv, pp. 123-133, 1901.
- 18 — Preliminary lists of the organic remains occurring in the various geological formations comprised in the map of the Ottawa district, including formations in the provinces of Quebec and Ontario, along the Ottawa River.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 49G-77G, 1902.
- 19 — Lists of fossils obtained from the several formations along the Ottawa River pertaining to the report on Sheet no. 121, Quebec and Ontario (Grenville Sheet).
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 139J-143J, 1902.

- 20 **Ami** (Henry M.). Artesian wells, paleontology, archæology, bibliographies, etc.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 258-265, 1902.
A report upon the work done by the author.
- 21 — Field notes on the geology of the country about Chelsea, Quebec.
Ottawa Nat., vol. 16, pp. 149-151, 1902.
Contains notes on local geology.
- 22 — Brief description of the map of the "Ottawa district."
Ottawa Nat., vol. 16, pp. 187-189, 1902.
- 23 — Annual report of the geological section of the Ottawa Field-Naturalists' Club, for the year 1901-1902.
Ottawa Nat., vol. 15, pp. 254-262, 1902.
Contains notes on the geology of the vicinity of Ottawa and a list of fossils from the Utica at Ottawa, Ontario.
- 24 — Notes on the Albany meeting of the Geological Society of America held December, 1900.
Can. Rec. Sci., vol. 8, pp. 471-477, 1902.
- 25 — Bibliography of Dr. George M. Dawson.
Can. Rec. Sci., vol. 8, pp. 503-516, 1902.
- 26 — Description of tracks from the fine-grained siliceous mudstones of the Knoydart formation (Eo-Devonian) of Antigonish County, Nova Scotia.
N. S. Inst. Sci., Trans., vol. 10, pp. 330-332, pl. ii, 1902.
Describes *Ichthyoidichnites acadiensis* n. sp.
- 27 — On the possible occurrence of a coal area beneath the Neo-Carboniferous or Permian strata of Pictou County, Nova Scotia.
Can. Mg. Rev., vol. 21, pp. 160-162, 3 text figs., 1902.
Describes the geologic structure of this area.
- 28 — The Union and Riversdale formations in Nova Scotia.
Science, new ser., vol. 15, p. 392, 1902.
Gives abstract of a paper read before the Geological Society of America with the title "The Meso-Carboniferous age of the Union and Riversdale formations in Nova Scotia."
- 29 — On the possible occurrence of a coal area beneath the Neo-Carboniferous or Permian strata of Pictou County, Nova Scotia.
Can. Mg. Inst., Jour., vol. 5, pp. 358-364, 3 figs., 1902.
Describes the geologic structure of this area.
- 30 — The Cambrian age of the Dictyonema slates of New Canaan and Kentville, Nova Scotia.
Geol. Mag., dec. iv, vol. 9, pp. 218-220, 1902.

- 31 **Ami** (Henry M.). *Esquisse géologique du Canada ou matériaux pour servir à la préparation d'un chronographe géologique pour le Canada.* Quebec, 61 pp., 1902. (Extracted from *Naturaliste canadien*, vol. 28, pp. 194-202; vol. 29, pp. 3-14, 19-30, 35-46, 52-61, 73-80, 1902.)

Gives a general résumé of the geology of Canada, describing the geographic distribution of the formations of Paleozoic, Mesozoic, Tertiary and Quaternary age.

- 32 **Anderson** (Frank M.). *The physiographic features of the Klamath Mountains.*

Jour. Geol., vol. 10, pp. 144-159, 1902.

Describes the physiographic features, the general character of the Cretaceous and Tertiary sediments and of the volcanic rocks, and the development of the present drainage.

- 33 — *Cretaceous deposits of the Pacific coast.*

Cal. Acad. Sci., Proc., 3d ser., vol. 2, *Geol.*, pp. 1-154, pls. i-xii, 1902.

Discusses the occurrence, characters, correlation, and faunas of the Cretaceous deposits of the Pacific coast region, and describes a large number of species—many of them new.

- 34 — *Ore deposits of Shasta County [California].*

Abstract: Science, new ser., vol. 15, p. 412, 1902.

- 35 **Anderson** (Tempest) and **Flett** (John S.). *Preliminary report on the recent eruption of the Soufrière in St. Vincent, and of a visit to Mont Pelée, in Martinique.*

London Roy. Soc., Proc., vol. 70, pp. 423-445, pls. xi-xiii, 1902; *Nature*, vol. 66, pp. 402-406, 1902.

Describes physical features of St. Vincent in the vicinity of Soufrière, the eruptions of May and July, 1902, of Soufrière and Mont Pelée, their effects and the character of the ejected materials.

- 36 **Arnold** (Delos) and **Arnold** (Ralph). *The marine Pliocene and Pleistocene stratigraphy of the coast of southern California.*

Jour. Geol., vol. 10, pp. 117-138, pls. i-v, figs. 1-7, 1902.

Describes the lithologic and faunal character of the strata and the Tertiary and Pleistocene history of the region. Discusses the relation of the Merced series with these beds.

- 37 **Arnold** (Ralph). *Bibliography of the literature referring to the geology of Washington.*

Wash. Geol. Surv., vol. 1, *Ann. Rept. for 1901*, pp. 323-338, 1902.

- 38 — **Arnold** (Delos) and. *The marine Pliocene and Pleistocene stratigraphy of the coast of southern California.*

See **Arnold** (Delos) and **Arnold** (Ralph), 36.

39 **Ashley** (George H.). The eastern interior coal field.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 265-305, pls. xvi-xix; fig. 27, 1902.

Describes extent, general geologic relations, stratigraphy and structure of the coal field occupying parts of Illinois, Indiana and Kentucky, and the character and occurrence of the coal and coal seams.

B.40 **Babcock** (E. J.). Water resources of the Devils Lake region [North Dakota].

N. Dak. Geol. Surv., 2d Bien. Rept., pp. 208-250, pls. xxxviii-xxxix, figs. 14-21, 1902.

Describes topography, geologic structure, and water supply of this region.

41 **Bailey** (L. W.). On some geological correlations in New Brunswick.

Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 7, sect. iv, pp. 143-150, 1901.

Discusses geologic age of formations previously referred to Cambro-Silurian in the light of new evidence.

42 — On some modes of occurrence of the mineral albertite.

Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 7, sect. iv., pp. 77-83, 1901.

Discusses geologic occurrence.

43 — New Brunswick.

Can. Geol. Surv., Summ. Rept. for 1901, pp. 195-204, 1902.

Describes observations upon Cambrian, Ordovician, Silurian and Carboniferous strata and economic products in this area.

44 **Bain** (H. Foster). Preliminary report on the lead and zinc deposits of the Ozark region. With an introduction by C. R. Van Hise and chapters on the physiography and geology by George I. Adams.

U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 23-227, pls. vi-xxv, figs. 2-38, 1901.

Discusses relations of ore deposits to the circulation of underground waters and describes the character and occurrence of minerals and ore deposits in this region.

45 — The western interior coal field.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 333-366, pls. xxxii-xxxiv, fig. 33, 1902.

Describes extent, general geologic relations, stratigraphy, and structure of this coal field occupying parts of Iowa, Missouri and Kansas, and the character and occurrence of the coal and coal beds.

- 46 **Bain** (H. Foster). Individuals of stratigraphic classification. Discussion.
 Jour. Geol., vol. 10, pp. 139-143, 1902.
 Discusses the subject of the point of view of the mining geologist.
- 47 — [In discussion of "The origin of ore-deposits."]
 Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 936-942, 1902.
- 48 — **Van Hise** (C. R.) and. Lead and zinc deposits of the Mississippi Valley, U. S. A.
 See Van Hise (C. R.) and Bain (H. F.), 1061.
- 49 **Barber** (William B.), **Nutter** (Edward H.) and. On some glauconite and associated schists in the Coast Ranges of California.
 See Nutter (E. H.) and Barber (W. B.), 809.
- 50 **Barbour** (Carrie Adeline). Some methods of collecting, preparing, and mounting fossils.
 Nebr. St. Hist. Soc., Proc. and Coll., 2d ser., vol. 2, pp. 258-264, fig. 1, 1898.
 Contains directions for collecting and preparing remains of fossil vertebrates.
- 51 **Barbour** (Erwin Hinckley). The barites of Nebraska and the Bad Lands.
 Nebr. St. Hist. Soc., Proc. and Coll., 2d ser., vol. 2, pp. 265-268, pls. ii-iv, fig. 2, 1898.
- 52 — Chalcedony-lime nuts from the Bad Lands, *Archihicoria siouxensis* gen. et sp. nov.
 Nebr. St. Hist. Soc., Proc. and Coll., 2d ser., vol. 2, pp. 272-274, pl. v, fig. 3, 1898.
- 53 — Discovery of meteoric iron in Nebraska.
 Nebr. St. Hist. Soc., Proc. and Coll., 2d ser., vol. 2, pp. 275-279, pl. vi, figs. 4-7, 1898.
 Describes occurrence of a meteorite near York, Nebraska.
- 54 — Volcanic ash in Nebraska soils.
 Nebr. St. Bd. Agr., Ann. Rept. for 1901, pp. 238-242, figs. 1-6, 1902.
 Describes character and occurrence of this substance.
- 55 — and **Fisher** (Cassius A.). The geological bibliography of Nebraska.
 Nebr. St. Bd. Agr., Ann. Rept. for 1901, pp. 248-266, 1902.
- 56 — and **Fisher** (Cassius A.). A new form of calcite-sand crystal.
 Am. Jour. Sci., 4th ser., vol. 14, pp. 451-454, figs. 1-4, 1902.
 Describes and figures material from South Dakota and Wyoming.
 Notes their stratigraphic range.

- 57 **Barlow** (Alfred Ernest). Descriptions of rocks collected in 1900, by J. Macintosh Bell, M. A., in Great Bear Lake district and thence to Great Slave Lake.

Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 29C-36C, 1902.

- 58 — Microscopic examination of sections of rocks associated with the iron ore deposits of the Kingston and Pembroke Railway district.

Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 81I-91I, 1902.

- 59 — The Sudbury district [Ontario].

Can. Geol. Surv., Summ. Rept. for 1901, pp. 141-145, 1902.

Describes observations chiefly of a petrological and mineralogical character made in this area.

- 60 — On the nepheline rocks of Ice River, British Columbia.

Ottawa Nat., vol. 16, pp. 70-76, 1902.

Contains a brief discussion of magmatic differentiation and a description of the rock types of the hand specimens.

- 61 — Dr. Alfred R. C. Selwyn . . . director, Geological Survey of Canada, 1869-1894.

Ottawa Nat., vol. 16, pp. 171-177, por., 1902.

Gives a sketch of the life and work of Dr. Selwyn.

- 62 **Barnum** (George). Heat and frost in the weathering of stone.

Stone, vol. 25, pp. 222-228, 1 pl., 1902.

Discusses the action of heat and frost in rock disintegration.

- 63 **Baron** (J. Francis Patch-Le). Some geological notes in Honduras, Central America.

Abstract: Science, new ser., vol. 16, pp. 264-265, 1902.

Gives a general account of the geology of this country.

- 64 **Barrell** (Joseph). Microscopical petrography of the Elkhorn mining district, Jefferson County, Montana.

U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 511-549, pl. lxii, 1901.

Gives an account of the petrographical characters of the various rock types of the Elkhorn mining district, Montana.

- 65 — The physical effects of contact metamorphism.

Am. Jour. Sci., 4th ser., vol. 13, pp. 279-296, 1902. Am. Geol., vol. 29, pp. 313-317, 1902.

Discusses the decomposition of rocks, the changes of mass and volume through metamorphism and the results of escape of gases.

- 66 **Bastom** (Florence). The geology of the crystalline rocks of Cecil County [Maryland].

Md. Geol. Surv., Cecil Co., pp. 83-148, pls. viii-xi, figs. 5-7, 1902.

Discusses the character, composition and distribution of the crystalline rocks of the county. A glossary of technical terms is added by E. B. M[athews].

- 67 **Beadle** (H. M.) Gold mining in eastern Oregon.
Eng. & Mg. Jour., vol. 73, p. 136, 1902.
- 68 **Beck** (R.) [In discussion of "The origin of ore-deposits."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 944-947, 1902.
- 69 **Beecher** (Charles Emerson). The ventral integuments of trilobites.
Am. Jour. Sci., 4th ser., vol. 13, pp. 165-174, pls. ii-v, fig. 1, 1901.
Describes the characters of the ventral integuments in *Triarthrus* which demonstrate that the conclusions of Jaekel in his study of *Ptychoparia* are erroneous.
- 70 — Notes on a new Xiphosuran from the Upper Devonian of Pennsylvania.
Am. Geol., vol. 29, pp. 143-146, 1 fig., 1902.
Describes *Prestwichia randalli* n. sp.
- 71 — The reconstruction of a Cretaceous dinosaur, *Claosaurus annectens* Marsh.
Conn. Acad. Arts & Sci., Trans., vol. 11, pt. 1, pp. 311-324, figs. 1-6, pls. xli-xlv, 1902.
- 72 — The ventral integument of trilobites.
Geol. Mag., dec. iv, vol. 9, pp. 152-162, pls. ix-xi, 8 text figs., 1902.
Discusses the ventral integument and appendages of trilobites.
- 73 — Revision of the Phyllocarida from the Chemung and Waverly groups of Pennsylvania.
London Geol. Soc., Quart. Jour., vol. 58, pp. 441-449, pls. xvii-xix, 1902.
- 74 **Beede** (J. W.). New fossils from the Upper Carboniferous of Kansas.
Kans. Univ., Sci. Bull., vol. 1, pp. 147-151, pl. v, 1902.
- 75 — Variation of the spiralia in *Seminula argentia* (Shepard) Hall.
Kans. Univ., Sci. Bull., vol. 1, pp. 155-157, pl. vi, 1902.
- 76 — Coal measures faunal studies, II. Fauna of the Shawnee formation (Haworth), the Wabaunsee formation (Prosser), the Cottonwood limestone.
Kans. Univ., Sci. Bull., vol. 1, pp. 163-181, 1902.
Describes geologic formations and gives lists of fossils from them.
- 77 — Note on the variation of the spires in *Seminula argentia* (Shepard) Hall.
Ind. Acad. Sci., Proc. for 1901, pp. 221-222, 1902.
- 78 — Invertebrate paleontology of the Red Beds [Oklahoma].
Okla. Geol. Surv., Adv. Bull., 1st Bien. Rept., 9 pp., 1 pl., 1902.
Discusses the age of the Red Beds and describes fossils collected from them.

- 79 **Bell** (J. Macintosh). Report on the topography and geology of Great Bear Lake and of a chain of lakes and streams thence to Great Slave Lake.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 1C-36C, 1902.
- 80 **Bell** (Robert). Summary report on the operations of the Geological Survey [Canada] for the year 1901.
Can. Geol. Surv., Summ. Rept. for 1901, 269 pp., maps nos. 751-764, 1902.
- 81 **Bell** (Robert). An outline of Idaho geology and of the principal ore deposits of Lemhi and Custer counties, Idaho.
Int. Mg. Cong., 4th session, Proc. pp. 64-80, 1901.
- 82 ——— Thunder Mountain and Mackay, Idaho.
Min. and Sci. Press, vol. 84, p. 62, 1902.
Describes the occurrence of gold and developments of the region.
- 83 ——— The origin of the fine gold of Snake River.
Eng. & Mg. Jour., vol. 73, pp. 143-144, 1902.
Describes the occurrence of gold bearing terraces of a Tertiary lake.
- 84 ——— The geology of Thunder Mountain and central Idaho.
Eng. & Mg. Jour., vol. 73, pp. 791-793, 1902.
Describes the general geology of the region.
- 85 ——— Facts about Thunder Mountain [Idaho].
Eng. & Mg. Jour., vol. 74, pp. 273-275, 4 figs., 1902.
Contains notes on the geologic structure of the region and sections of strata.
- 86 **Berkey** (Charles P.). Sacred Heart "geyser spring," [Minnesota].
Am. Geol., vol. 29, pp. 87-88, 1902.
- 87 ——— Origin and distribution of Minnesota clays.
Am. Geol., vol. 29, pp. 171-177, 1902.
Describes the occurrence of the Ordovician, Cretaceous, and glacial clays.
- 88 **Beyer** (S. W.). Mineral production of Iowa in 1901.
Iowa Geol. Surv., vol. 12, Ann. Rept., 1901, pp. 39-61, pls. ii-iii, fig. 1, 1902.
Includes a discussion of the occurrence and production of iron ore at Iron Hill, Allamakee County, Iowa.
- 89 ——— Iowa's iron mine.
Eng. & Mg. Jour., vol. 73, pp. 275-276, 2 figs., 1902.
Describes the occurrence, character and origin of the ore.
- 90 **Bibbins** (A.), **Clark** (William B.) and. Geology of the Potomac group in the middle Atlantic slope.
See Clark (W. B.) and Bibbins (A.), 176.

- 91 **Blake** (William P.). The caliche of southern Arizona; an example of deposition by the vadose circulation.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 220-226, 1902.
Describes the formation of the caliche, a calcareous formation, and gives its chemical composition and that of well waters.
- 92 — The geology of the Galiuro Mountains, Arizona, and of the gold-bearing ledge known as Gold Mountain.
Eng. & Mg. Jour., vol. 73, pp. 546-547, 5 figs, 1902.
Describes the general geology of the region and the occurrence and origin of the gold ores.
- 93 — Lake Quiburis, an ancient Pliocene lake in Arizona.
Ariz. Univ., Monthly, vol. 4, no. 4, 1902. (Not seen.)
Abstract: Science, new ser., vol. 15, pp. 413-414, 1902.
- 94 — Notes on the mines and minerals of Guanajuato, Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 216-223, 1902.
- 95 **Blakemore** (William). The iron ore deposits near Kitchener, B. C.
Can. Mg. Inst., Jour., vol. 5. pp. 76-80, 5 pls., 1902; Eng. & Mg. Jour., vol. 73, pp. 382-383, 1902.
- 96 [**Bogdanovič** (Karl Ivanovič)]. [Sketch of Nome.]
St. Petersburg. 8+116 pp., 1 pl., 1901. (Not seen.)
- 97 **Böggild** (O. B.). On ilvaite from Siorarsuit at Julianehaab, Greenland.
Meddelelser om Groenland, vol. 25, pp. 43-89, 32 figs., 1902; Copenhagen Univ., Min. and Geol. Mus., Cont. to Min., no. 1, 1902.
- 98 — and **Winther** (Chr.). On some minerals from the nephelite-syenite at Julianehaab, Greenland (epistolite, britholite, schizolite and steenstrupite), collected by G. Flink.
Meddelelser om Groenland, vol. 24, pp. 181-213, 7 figs., 1901.
- 99 **Bond** (Josiah). Copper leaching at the American copper mine.
N. J. Geol. Surv., Ann. Rept. for 1901, pp. 153-161, 1902.
Describes experiments made upon copper ores to determine methods of extracting copper.
- 100 **Bonney** (T. G.). On a sodalite syenite (ditroite) from Ice River Valley, Canadian Rocky Mountains.
Geol. Mag., dec. iv, vol. 9, pp. 199-206, 1902.
Describes mode of occurrence and gives chemical analysis of this mineral.
- 101 — The Canadian Rockies. Part II: On some rock specimens collected by E. Whympers, esq., F. R. S. E., in the Canadian Rocky Mountains.
Geol. Mag., dec. iv, vol. 9, pp. 544-550, 1902.

- 102 **Bordeaux** (A.). Les anciens chenaux aurifères de Californie.
Annales des Mines, 10th ser., vol. 2, pp. 217-258, 1902.
Describes the occurrence, character, and origin of the auriferous gravels of the State.
- 103 **Böse** (Emilio). Sobre la independencia de los volcanes de grietas preexistentes.
Soc. Cient. Ant. Alz., Mem., vol. 14, pp. 199-231, 3 figs., 1900.
Discusses origin of volcanoes.
- 104 — **Villarello** (Juan de D.) and. Criaderos de fierro de la hacienda de Vaquerias, en el estado de Hidalgo.
See Villarello (J. de D.) and Böse (E.), 1076.
- 105 **Boston Society of Natural History**. Memorial of Professor Alpheus Hyatt.
Boston Soc. Nat. Hist., Proc., vol. 30, pp. 413-433, 1902.
Contains remarks of various members at a meeting of the Society February 5, 1902.
- 106 **Bowman** (H. L.) On an occurrence of minerals at Haddam Neck, Connecticut, U. S. A.
Min. Mag., vol. 13, pp. 97-121, pl. iv, 5 figs., 1902.
- 107 **Bownocker** (J. A.). History of the Little Miami River [Ohio].
Ohio State Acad. Sci., Special Papers, no. 3, pp. 32-45, 2 figs., map, 1900.
Discusses drainage changes in the valley of the Little Miami River.
- 108 — The oil and gas producing rocks of Ohio.
Jour. Geol., vol. 10, pp. 822-838, 1902; Univ. Bull., ser. 7, no. 3 (Geol. ser., no. 4), 1902.
Describes the character and stratigraphic relations of these rocks and the occurrence of oil and gas.
- 109 **Braden** (William). Certain conditions in veins and faults in Butte, Montana.
Can. Mg. Review, vol. 21, pp. 149-152, 8 figs. in text, 1902; Can. Mg. Inst., Jour., vol. 5, pp. 296-308, 8 figs., 1902.
Describes geologic structure and ore deposition in this area.
- 110 **Branner** (John C.). The zinc and lead deposits of north Arkansas.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 572-603, 33 figs. [maps, sections, etc.], 1902.
Describes occurrence, mode of formation, and relations of bedded ores to the geologic structure of the region, and gives analyses of some of the ores.
- 111 — [In discussion of paper by Eric Hedburg on "The Missouri and Arkansas zinc mines."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 1013-1014, 1902.
- 112 — Syllabus of a course of lectures on elementary geology. Ed. 2. 369 pp., 25 pls., 109 figs., 1902.

- 113 **Branner** (John C.) and **Newsom** (John F.). The phosphate rocks of Arkansas.
Ark. Agr. Exp. Sta., Bull. no. 74, 123 pp., 23 figs., 1902.
Describes the character and geographic and geologic occurrence of phosphate rock in Arkansas.
- 114 **Breeze** (Fred J.). The valley of the lower Tippecanoe River [Indiana].
Ind. Acad. Sci., Proc. for 1901, pp. 215-216, 1 fig., 1902.
- 115 **Brewer** (William M.). British Columbia iron and coal. A description of the various known deposits, their locations, qualities, and the extent of development.
Mines & Minerals, vol. 23, pp. 1-4, 1902.
- 116 — Mining industry and mineral resources of British Columbia.
Eng. Mag., vol. 23, pp. 831-846, 15 figs., 1902; vol. 24, pp. 64-74, 1 fig., 1902.
- 117 — John Wesley Powell.
Am. Jour. Sci., 4th ser., vol. 14, pp. 377-382, 1902.
Gives a sketch of Major Powell's life and work.
- 118 — White Horse mining district, Yukon Territory.
Eng. & Mg. Jour., vol. 73, pp. 167-168, 2 figs., 1902.
Describes the general geology of the region and the occurrence of copper and coal.
- 119 — M'Kee Creek, Atlin mining division, British Columbia.
Eng. & Mg. Jour., vol. 73, pp. 242-243, 1902.
Describes the placers of the region.
- 120 — British Columbia coal fields.
Eng. & Mg. Jour., vol. 73, pp. 408-410, 1902.
Describes the occurrence of coal in Vancouver Island.
- 121 — The Crow's Nest Pass coal fields [Canada].
Eng. & Mg. Jour., vol. 73, pp. 549-552, 2 figs., 1902.
Describes the geology of the region and the occurrence of coal.
- 122 — British Columbia, Boundary mining district, progress in mining and smelting.
Eng. & Mg. Jour., vol. 73, pp. 617-623, 4 figs., 1902.
Describes the general geology and the occurrence of the gold, silver, and copper ores.
- 123 — Alberta Territory, Canada. Coal fields of Crow's Nest Pass Branch of the Canadian Pacific Railway.
Eng. & Mg. Jour., vol. 73, pp. 757-758, 1902.
Describes the geology and the development of the coal industry.
- 124 **Bridge** (Norman). Edward Claypole, the man.
Am. Geol., vol. 29, pp. 30-40, 1902.

- 125 **Bridge** (Norman). Address at the presentation of the memorial bronze of Edward Waller Claypole, Throop Polytechnic Institute, Pasadena, Cal., June 2, 1902. (Not seen.)
- 126 **Briggs** (Elmer S.) and **Farrington** (Oliver Cummings). The Dinosaur beds of the Grand River Valley of Colorado. *Sci. Am. Suppl.*, vol. 73, pp. 22061-22062, 2 figs., 1902.
- 127 **Brigham** (Albert Perry). A text-book of geology. New York, D. Appleton and Company. 477 pp., 294 figs., 1902.
- 128 **Broadhead** (Garland C.). The New Madrid earthquake. *Am. Geol.*, vol. 30, pp. 76-87, 1902.
Gives an account of earthquake shocks in the Mississippi Valley in 1811 and 1812.
- 129 **Brock** (R. W.). The Boundary Creek district, British Columbia. *Can. Geol. Surv., Summ. Rept. for 1901*, pp. 49-67, 1902.
Describes the author's observations in this region.
- 130 — The ore deposits of the Boundary Creek district, B. C. *Can. Mg. Inst., Jour.*, vol. 5, pp. 265-378, 1902; *Can. Mg. Rev.*, vol. 21, pp. 156-160, 1902.
Describes the rocks of this area and the occurrence of ore-bodies.
- 131 **Broili** (F.). Ein beitrag zur kenntniss von Diplocaulus Cope. *Centralbl. für Min., etc.*, no. 17, pp. 536-541, 4 figs., 1902.
- 132 **Brooks** (Alfred Hulse), assisted by **Richardson** (George B.) and **Collier** (Arthur J.). A reconnaissance of the Cape Nome and adjacent gold fields of Seward Peninsula, Alaska, in 1900. *U. S. Geol. Surv. Reconnaissances in the Cape Nome and Norton Bay regions, Alaska, in 1900*, pp. 1-184, pls. i-xxvii, figs. 1-3, 1901.
Describes the physiography and the surficial, general, and economic geology of the region, and includes detailed descriptions of the various placers.
- 133 — The coal resources of Alaska. *U. S. Geol. Surv., 22d Ann. Rept.*, pt. 3, pp. 515-571, pl. xxxv, 1902.
Gives a general account of the Cretaceous and Tertiary geology of Alaska and discusses the character and occurrence of coals in these formations.
- 134 — Preliminary report on the Ketchikan mining district, Alaska, with an introductory sketch of the geology of southeastern Alaska. *U. S. Geol. Surv., Professional Paper no. 1*, 120 pp., 2 pls., 6 figs., 1902.
Describes the physiographic and stratigraphic features of the region and the occurrence of gold and copper.

- 135 **Brooks** (Alfred Hulse), assisted by **Richardson** (George B.) and **Collier** (Arthur J.). Geological reconnaissances in south-eastern Alaska.
Geol. Soc. Am., Bull., vol. 13, pp. 253-266, 1 fig., 1902.
Discusses the general stratigraphic relations, geologic history, and correlation of the beds of the region.
- 136 — A reconnaissance in the Mt. McKinley region, Alaska.
Abstract: Science, new ser., vol. 16, pp. 985-986, 1902.
- 137 **Brooks** (R. C.). See Phillips (William B.), 853.
- 138 **Brower** (Jacob V.). Kakabikansing [Little Falls, Minnesota].
Memoirs of Explorations in the Basin of the Mississippi, vol. 5, Kakabikansing. St. Paul, Minn., 126 pp., 30 pls., 1902.
Contains observations on the geology in the vicinity of Little Falls, Minn.
- 139 **Brown** (Robert Marshall). The clays of the Boston Basin.
Am. Jour. Sci., 4th ser., vol. 14, pp. 445-450, figs. 1-4, 1902.
Discusses the correlation of the clays of the region.
- 140 — Gaspee Point [Rhode Island]: a type of cusped foreland.
Jour. Geol., vol. 1, pp. 343-352, figs. 1-3, 1902.
Describes the formation and gives a catalogue of cusped forelands.
- 141 — The Mississippi River from Cape Girardeau to the head of the passes.
Am. Geog. Soc., Bull., vol. 34, pp. 371-383, figs. 1-8, 1902.
Contains notes on the physiography of the region.
- 142 **Brown** (S. S.). A bibliography of works upon the geology and natural resources of West Virginia, from 1764 to 1901.
W. Va. Geol. Surv., Bull. no. 1, 85 pp., 1901.
- 143 **Bruncken** (Ernest). Physiographical field notes in the town of Wauwatosa [Wisconsin].
Wis. Nat. Hist. Soc., Bull., new ser., vol. 1, pp. 95-99, 1900.
Describes glacial and lacustrine deposits and discusses the origin of a natural exposure of Niagara limestone.
- 144 **Buchan** (J. S.). Some notes on Mount Royal [Quebec].
Can. Rec. Sci., vol. 8, pp. 517-525, 4 figs., 1902.
Describes the general physiography and geology of the region.
- 145 **Butts** (Charles). Recent structural work in western Pennsylvania.
Abstract: Science, new ser., vol. 15, p. 823, 1902.
- 146 **Byers** (H. G.). The water resources of Washington. Potable and mineral water.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 285-295, pls. xxviii-xxix, 1902.

C.

- 147 **Calkins** (Frank C.). A contribution to the petrography of the John Day Basin.

Univ. of Cal., Dept. of Geol., Bull., vol. 3, pp. 109-172, pl. xvii, 1902.

Gives a resume of the geology of the John Day Basin in Oregon, and describes the rocks occurring in the pre-Eocene, Eocene, and Miocene formations in this region.

- 148 **Calvin** (Samuel). The geology and geological resources of Iowa.

Int. Mg. Cong., 4th session, Proc., pp. 52-56, 1901.

Describes the stratigraphic geology and the occurrence of economic products of the State.

- 149 — The geological formations of Iowa.

Stone, vol. 25, pp. 118-124, 4 figs., 1902.

Describes briefly the character and distribution of the geologic formations in the State of Iowa.

- 150 — Tenth annual report of the State geologist [Iowa].

Iowa Geol. Surv., vol. 12, Ann. Rept., 1901, pp. 11-27, pl. i, 1902.

Gives a nomenclature of the divisions of the Glacial period and discusses the geologic occurrence of oil and gas.

- 151 — Concrete examples from the topography of Howard County, Iowa.

Am. Geol., vol. 30, pp. 375-381, pl. xxvii, 1902.

Describes the topographic forms of the region and reviews its glacial history.

- 152 — The geology and geological resources of Iowa—the formations and their economical values.

Mines & Minerals, vol. 22, pp. 560-561, 1902.

- 153 — [In discussion of paper by T. C. Chamberlin on "The geologic relations of the human relics of Lansing, Kan."]

Jour. Geol., vol. 10, pp. 777-778, 1902.

- 154 **Campbell** (C. M.). Mining in the Rossland district [British Columbia].

Can. Mg. Inst., Jour., vol. 5, pp. 447-483, 36 figs., 2 pls., 1902; Can. Mg. Rev., vol. 21, pp. 183-194, 1902.

Contains notes on the rocks of this area.

- 155 **Campbell** (Marius R.). Recent geological work in western Pennsylvania.

Eng. & Mg. Jour., vol. 73, p. 245, 1902.

Abstract of paper read before the Geological Society of Washington.

- 156 **Campbell** (Marius R.). Reconnaissance of the borax deposits of Death Valley and Mohave Desert [California].
U. S. Geol. Surv., Bull. no. 200, 23 pp., 1 pl., 1902; Eng. & Mg. Jour., vol. 74, pp. 517-519, 1 fig., 1902.
Describes topography and geology of the region and occurrence of borax deposits.
- 157 — **Raleigh Folio—West Virginia.**
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 77, 1902.
Describes geographic and topographic features, general geologic relations, the character and occurrence of Carboniferous formations and coal beds.
- 158 — **Masontown-Uniontown Folio—Pennsylvania.**
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 82, 1902.
Describes geographic and topographic features, general geologic relations, character and occurrence of Devonian and Carboniferous strata, Quaternary deposits, and the mineral resources, chiefly coal.
- 159 — **Recent geological work in Pennsylvania.**
Abstract: Science, new ser., vol. 15, p. 189, 1902.
- 160 — **White** (David) and. The bituminous coal field of Pennsylvania.
See White (David) and Campbell (M. R.), 1119.
- 161 — **White** (David), and **Haseltine** (Robert M.). The northern Appalachian coal field.
See White (David), Campbell (M. R.), and Haseltine (R. M.), 1120.
- 162 **Carter** (Oscar S. C.). The arid district between the Rio Grande and the Pacific traversed by the engineers of the Mexican Boundary Commission in 1892-94.
Phila. Engrs. Club., Proc., vol. 19, pp. 252-267, 1902.
Contains notes on the physiography of the region.
- 163 **Case** (E. C.). Paleontological notes.
Jour. Geol., vol. 10, pp. 256-261, pls. i-ii, 1902.
Describes *Lysorophus tricarinatus* and an undetermined Pelycosaurian.
- 164 **Casey** (Thomas L.). The Jackson outcrops on Red River [Louisiana].
Science, new ser., vol. 15, pp. 716-717, 1902.
Describes outcrops and discusses the fauna obtained, describing two new species.
- 165 **Chalmers** (Robert). Report on the surface geology shown on the Fredericktown and Andover quarter-sheet maps, New Brunswick.
Can. Geol. Surv., new ser., vol. 12, pp. 1M-41M, map, 1902.
Describes physiography, striae and other glacial phenomena of this area.

- 166 **Chalmers** (Robert). On borings for natural gas, petroleum and water; also notes on the surface geology of part of Ontario. Can. Geol. Surv., Summ. Rept. for 1901, pp. 158-169, 1902.
- 167 **Chamberlin** (Thomas C.). The geologic relations of the human relics of Lansing, Kansas.
Jour. Geol., vol. 10, pp. 745-777, figs. 1-13, 1902.
Discusses certain phases of fluvial action and their bearing on the phenomena at this locality. Describes the character and relations of the river deposits and presents the author's interpretations.
- 168 — Distribution of the internal heat of the earth.
Abstract: Science, new ser., vol. 15, p. 89, 1902.
- 169 — Has the rate of rotation of the earth changed appreciably during geological history?
Abstract: Science, new ser., vol. 15, p. 89, 1902.
- 170 **Chapman** (Robert H.). Our northern Rockies.
Nat. Geog. Mag., vol. 13, pp. 361-372, 10 figs, 1902.
Contains physiographic notes on the Rocky Mountains in Montana.
- 171 — The value of topographic maps.
Mg. & Sci. Press, vol. 85, p. 148, 1902.
- 172 **Christy** (S. B.). Biographical notice of Joseph LeConte.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 765-793, 1 pl., 1902.
- 173 **Clapp** (Frederick G.). Geological history of the Charles River in Massachusetts.
Am. Geol., vol. 29, pp. 218-233, pls. xiii-xvi, 1902. See no. 139 in U. S. Geol. Surv., Bull. no. 203.
- 174 **Clark** (W. Blair). Drainage modifications in Knox, Licking and Coshocton counties [Ohio].
Denison Univ., Sci. Lab., Bull., vol. 12, art. 1, pp. 1-16, pls. i-iii, 1902.
Discusses modifications produced in the drainage of this area by the ice of the Glacial period.
- 175 **Clark** (William). Some new points on the fin attachment of Dinichthys and Cladodus.
Ohio State Acad. Sci., 6th Ann. Rept., pp. 46-48, 3 figs., 1898.
- 176 **Clark** (William Bullock) and **Bibbins** (A.). Geology of the Potomac group in the middle Atlantic slope.
Geol. Soc. Am., Bull., vol. 13, pp. 187-214, pls. xxii-xxviii, fig. 1, 1902.
Describes the character, occurrence and distribution of the divisions of the Potomac group, the interpretation of these deposits and the surface configuration of the crystalline floor and of the Potomac group. Discusses the age of these deposits.

- 177 **Clark** (William Bullock) and **Bibbins** (A.). The Potomac group in Maryland.
Abstract: Science, new ser., vol. 15, p. 905, 1902.
- 178 — and **Martin** (George Curtis). Correlation of the Coal Measures of Maryland.
Geol. Soc. Am., Bull., vol. 13, pp. 215-232, pls. xxix-xxxix, 1902.
Describes the character and occurrence of the subdivisions of the Coal Measures group in Maryland and discusses their correlation with the Coal Measures in other portions of the Appalachian province.
- 179 — and others.
Md. Geol. Surv., vol. 4, 524 pp., 69 pls., 34 figs., 1902.
- 180 — and others. (Reports on Cecil County [Maryland].)
Md. Geol. Surv., Cecil Co., 322 pp., 30 pls., 24 figs., 1902. Atlas with 3 maps.
- 181 — and others. (Reports on Garrett County [Maryland].)
Md. Geol. Surv., Garrett Co., 340 pp., 26 pls., 12 figs., 1902. Atlas with 2 maps.
- 182 **Clarke** (Frank Wigglesworth) and **Steiger** (George). The action of ammonium chloride upon silicates.
U. S. Geol. Surv., Bull. no. 207, 57 pp., 1902.
- 183 **Clarke** (John M.). Report of the State paleontologist, 1901 [N. Y.]
N. Y. State Mus., Bull. no. 52, pp. 419-456, 1902.
Contains brief discussion of the results of the studies of the Cambrian, Silurian and Devonian rocks and fauna of the state in 1901.
- 184 — George Bancroft Simpson.
N. Y. State Mus., Bull. no. 52, pp. 457-460, 1902.
Contains an account of his life and work.
- 185 — Paleontologic results of the areal survey of the Olean quadrangle [N. Y.].
N. Y. State Mus., Bull. no. 52, pp. 524-528, 1902.
Discusses the paleontologic aspect of the faunas of the Devonian-Carboniferous beds of the region.
- 186 — A new genus of Paleozoic brachiopods, *Eunoa*, with some considerations therefrom on the organic bodies known as *Discinocaris*, *Spathiocaris* and *Cardiocaris*.
N. Y. State Mus., Bull. no. 52, pp. 606-615, pls. v-viii, 2 figs., 1902.
- 187 — [Note on the occurrence and relations of the fauna.] [In Luther (D. D.), Stratigraphic value of the Portage sandstone. N. Y.]
N. Y. State Mus., Bull. no. 52, pp. 630-631, 1 fig., 1902.
- 188 — The indigene and alien faunas of the New York Devonian.
N. Y. State Mus., Bull. no. 52, pp. 664-672, 1902.
Discusses the influence of the supposed barriers in the Devonian seas upon the migrations and distribution of the faunas of that period.

- 189 **Clarke** (John M.). Report of the State paleontologist, 1900.
N. Y. State Mus., 54th Ann. Rept., vol. 1, appendix I, pp. 3-81, 1902.
- 190 — Notes on Paleozoic crustaceans.
N. Y. State Mus., 54th Ann. Rept., vol. 1, appendix I, pp. 83-119, pls. i-iv, 1902.
- 191 — Origin of the faunas of the Marcellus limestones of New York.
Abstract: Science, new ser., vol. 15, p. 90, 1902.
- 192 — **Ruedemann** (R.) and **Luther** (D. D.). Contact lines of Upper Siluric formations on the Brockport and Medina quadrangles, N. Y.
N. Y. State Mus., Bull. no. 52, pp. 517-523, 1902.
Describes outcrops of these beds at various localities.
- 193 **Claypole** (Edward W.). On an unrecognized coal-horizon in northeastern Ohio.
Ohio State Acad. Sci., 3d Ann. Rept., pp. 9-12 [1895].
Discusses stratigraphic position of coal seams in the vicinity of Massillon, Ohio.
- 194 — On the Salina group in northeastern Ohio.
Ohio State Acad. Sci., 3d Ann. Rept., pp. 12-13 [1895].
Recognizes the presence of Salina from the records of borings.
- 195 **Cleland** (H. F.). The landslides of Mt. Graylock and Briggsville, Mass.
Jour. Geol., vol. 10, pp. 513-517, 2 figs., 1902.
Describes the occurrence of recent landslips.
- 196 **Clements** (J. Morgan). Ellipsoidal structure in the pre-Cambrian basic and intermediate rocks of the Lake Superior region.
Abstract: Science, new ser., vol. 16, pp. 260-261, 1902.
- 197 — Vermilion district of Minnesota.
Abstract: Science, new ser., vol. 16, p. 261, 1902.
Describes the stratigraphy and geological structure of this region and discusses the origin of the ores.
- 198 **Clendenin** (W. W.). A preliminary report upon the Florida parishes of east Louisiana and the bluff, prairie and hill lands of southwest Louisiana.
La. State Experiment Stations: Geol. & Agric., pt. 3, pp. 159-256 [1896?].
Describes topographic, drainage and geologic features, soils and other economic resources of this area.
- 199 — A preliminary report upon the bluff and Mississippi alluvial lands of Louisiana.
La. State Experiment Stations, Geol. & Agric., pt. 4, pp. 257-290 (1897?).
Describes physiographic features and soils of this area.

- 200 **Coleman** (Arthur P.). Types of iron bearing rocks in Ontario.
Eng. & Mg. Jour., vol. 74, p. 842, 1902.
- 201 — Nepheline and other syenites near Port Coldwell, Ontario.
Am. Jour. Sci., 4th ser., vol. 14, pp. 147-155, 1902.
Describes the megascopic and microscopic characters of these rocks.
- 202 — The duration of the Toronto inter-Glacial period.
Am. Geol., vol. 29, pp. 71-80, 1902.
Reviews a recent paper by Upham and discusses the evidences indicating the duration of this period.
- 203 — The Huronian question.
Am. Geol., vol. 29, pp. 327-334, 1902.
Discusses the relations of the Huronian rocks and the views of various geologists regarding these questions.
- 204 — Rock basins of Helen mine, Michipicoten, Canada.
Geol. Soc. Am., Bull., vol. 13, pp. 293-304, pl. xlv, figs. 1-2, 1902.
Describes the topography and the occurrence and origin of the rock basins.
- 205 — Iron ranges of northwestern Ontario.
Ont. Bureau of Mines, Rept. for 1902, pp. 128-151, pls. xiii-xiv, 1902.
Describes geographic and geologic distribution of the iron bearing rocks and the stratigraphic position of the ores.
- 206 — Syenites near Port Coldwell [Ontario].
Ont. Bureau of Mines, Rept. for 1902, pp. 208-213, pls. xix-xx, 1902.
Describes the occurrence and lithologic characters of these rocks.
- 207 — and **Willmott** (A. B.). The Michipicoten iron ranges [Ontario].
Toronto Univ. Studies, Geol. ser., no. 2, 47 pp., 2 maps, 1902.
- 208 — and **Willmott** (A. B.). The Michipicoten iron region [Ontario].
Ont. Bureau of Mines, Rept. for 1902, pp. 152-185, pls. xv-xviii, 2 text figs., geol. map, 1902.
Describes the topography, gives a classification of the Huronian rocks, discusses the geology and formation of the iron ores, and describes the petrology of this region.
- 209 **Collier** (Arthur J.). A reconnaissance of the northwestern portion of Seward Peninsula, Alaska.
U. S. Geol. Surv., Professional Paper no. 2, 70 pp., 12 pls., 1902.
Describes the geology and physiography of this region and gives notes on the petrology, and the occurrence of gold and tin.
- 210 — See Brooks (Alfred H.), 132.
- 211 **Collins** (Arthur L.). [In discussion of "The origin of ore-deposits."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 951-953, 1902.

- 212 **Comstock** (Theodore B.) Edward Claypole, the scientist.
Am. Geol., vol. 29, pp. 1-23, 1 pl., 1902.
- 213 **Condra** (G. E.). New Bryozoa from the Coal Measures of Nebraska.
Am. Geol., vol. 30, pp. 337-359, pls. xviii-xxv, 1902.
- 214 **Corless** (C. V.). Notes on the geology and ore deposits of southeastern British Columbia.
Can. Mg. Inst., Jour., vol. 5, pp. 503-527, 1 pl., 1902; Can. Mg. Review, vol. 21, pp. 211-218, 1902.
Describes the geology and occurrence of ore bodies of this area.
- 215 **Cornwall** (H. B.). Occurrence of greenockite on calcite from Joplin, Missouri.
Am. Jour. Sci., 4th ser., vol. 14, pp. 7-8, 1902.
- 216 **Crane** (W. R.). The Kansas coal mines of the Missouri Valley.
Eng. & Mg. Jour., vol. 74, pp. 514-516, 1902.
Contains notes on the geologic occurrence of the coal seams.
- 217 **Crawford** (J.). Earthquakes in Nicaragua.
Am. Geol., vol. 29, p. 323, 1902.
- 218 — Volcanoes and earthquakes in Nicaragua.
Am. Geol., vol. 29, p. 395, 1902.
- 219 — List of the most important volcanic eruptions and earthquakes in western Nicaragua within historic time.
Am. Geol., vol., 30, pp. 111-113, 1902.
- 220 — Additions to the list of Nicaragua volcanic eruptions in historic time.
Am. Geol., vol. 30, pp. 395-396, 1902.
- 221 **Crook** (Alja Robinson). The mineralogy of the Chicago area.
Chicago Acad. Sci., Nat. Hist. Surv., Bull. no. 5, 57 pp., 21 figs., 10 pls., 1902.
Discusses the occurrence and composition of the minerals of this area.
- 222 **Crosby** (William O.). Geological history of the hematite iron ores of the Antwerp and Fowler belt in New York.
Am. Geol., vol. 29, pp. 233-242, figs. 1-2, 1902.
Describes the character and occurrence of the ores and the associated rocks.
This paper is no. 175 of U. S. Geol. Surv., Bull. no. 203.
- 223 — Origin and relations of the auriferous veins of Algoma [western Ontario].
Tech. Quart., vol. 15, pp. 161-180, figs 1-8, 1902.
Presents the author's observations in the region, reviews Dr. Coleman's conclusions, and discusses the origin of these auriferous veins.
Bull. 221-03-3

- 224 **Crosby** (William O.). A study of hard-packed sand and gravel. Tech. Quart., vol. 15, pp. 260-263, 1902.
Describes the character of the glacial gravels and gives the results of penetration tests.
- 225 — The origin of eskers.
Am. Geol., vol. 30, pp. 1-38, 1902; Boston Soc. Nat. Hist., Proc., vol. 30, pp. 375-411, 1902.
Describes the characteristics of eskers, discusses the hypotheses as to their origin and reviews the evidence that has been heretofore presented.
- 226 **Cross** (Whitman). Geologic formations versus lithologic individuals.
Jour. Geol., vol. 10, pp. 223-244, 1902.
Reviews papers by Willis and Eckel and discusses geological formations as divisions of rock masses which should be discriminated through the consideration of all the geologic data which each contains.
- 227 — Systematic petrography.
Jour. Geol., vol. 10, pp. 332-376, 451-499, 1902.
Reviews the development of the science of petrography and gives the author's summary of some of the defects of the modern classifications of igneous rocks and of the status of systematic petrography at the close of the nineteenth century.
- 228 — **Iddings** (Joseph P.), **Pirsson** (Louis V.), and **Washington** (Henry S.). A quantitative chemico-mineralogical classification and nomenclature of igneous rocks.
Jour. Geol., vol. 10, pp. 555-690, 1902.
Gives a general summary of the new system and describes the classification and nomenclature proposed. Includes chemical analyses and tables of alferic minerals and the rocks in which they occur.
- 229 **Cumings** (Edgar R.). Lower Silurian system of eastern Montgomery County, New York.
N. Y. State Mus., Bull. no. 34 [also in 54th Ann. Rept., vol. 1], pp. 418-468, pls. i-iv, 1 fig., 5 cross sections, geol. map, 1902.
- 230 — A revision of the Bryozoan genera *Dekayia*, *Dekayella* and *Heterotrypa* of the *Cincinnati* group.
Am. Geol., vol. 29, pp. 197-218, pls. ix-xii, 1902.
Reviews the literature on these genera and describes new species.
- 231 — and **Mauck** (A. V.). A quantitative study of variation in the fossil Brachiopod *Platystrophia lynx*.
Am. Jour. Sci., 4th ser., vol. 14, pp. 9-16, pls. ii-iii, 1902.
- 232 **Cushing** (H. P.). Recent geologic work in Franklin and St. Lawrence counties [New York].
N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r23-r82, pls. i-vii, 1902.
Discusses topography, geologic structure and petrology of the area.

- 233 **Cushing** (H. P.). Pre-Cambrian outlier at Little Falls, Herkimer County [New York].

N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r83-r95, 1902.

Describes exposures and microscopic and chemical characters of rocks.

- 234 — The derivation of the rock name "Anorthosite."

Am. Geol., vol. 29, pp. 190-191, 1902.

Discusses the use of the name.

D.

- 235 **Dale** (T. Nelson). Structural details in the Green mountain region [Vermont] and in eastern New York (Second paper).

U. S. Geol. Surv., Bull. no. 195, 22 pp., 4 pls., 8 figs., 1902.

Discusses geologic phenomena presented in this area.

- 236 **Dall** (William H.). A new *Lyropecten*.

Nautilus, vol. 14, pp. 117-118, 1901.

- 237 — *Alpheus* Hyatt.

Pop. Sci. Mo., vol. 60, pp. 439-441, por., 1902.

Gives a sketch of the life and work of Professor Hyatt.

- 238 — The Grand Gulf formation.

Science, new ser., vol. 16, pp. 946-947, 1902.

Discusses the age of this formation.

- 239 **Daly** (Reginald A.). The geology of the northeast coast of Labrador.

Harv. Coll., Mus. Comp. Zool., Bull., vol. 38, pp. 205-270, pls. i-xiii, 4 text figs., 1902.

Gives an account of geologic and topographic observations made along the coast of Labrador.

- 240 — The geology of the region adjoining the western part of the International Boundary.

Can. Geol. Surv., Summ. Rept. for 1901, pp. 37-49, 1902.

Describes the author's observations in the southern part of British Columbia.

- 241 **Darton** (Nelson Horatio). Catalogue of photographs belonging to the Geological Society of America.

Geol. Soc. Am., vol. 13, pp. 377-474, 1902.

- 242 — Stratigraphy of the Big Horn Mountains.

Abstract: Science, new ser., vol. 15, p. 823, 1902.

- 243 — Preliminary list of deep borings in the United States. Part I.—Alabama-Montana.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 57, 60 pp., 1902.

- 244 **Darton** (Nelson Horatio). Preliminary list of deep borings in the United States. Part II.—Nebraska—Wyoming.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 61, 67 pp., 1902.
- 245 ——— Norfolk Folio—Virginia—North Carolina.
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 80, 1902.
Describes the geographic and topographic features, the general geologic relations, and the character and occurrence of Cretaceous, Tertiary and Quaternary strata, and discusses the soils and underground waters.
- 246 ——— Oelrichs Folio—South Dakota—Nebraska.
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 85, 1902.
Describes geographic and topographic features, the general geologic relations and history, the characters and occurrence of Carboniferous, Juratrias, Cretaceous, Tertiary and Quaternary strata, and the economic resources.
- 247 ——— and others. New York City Folio—New York—New Jersey.
See Merrill (F. J. H.) and others, 770.
- 248 **Davis** (Arthur Powell). Water storage on Salt River, Arizona.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 73, 54 pp., 4 figs., 24 pls., 1902.
- 249 ——— Hydrography of the American Isthmus.
U. S. Geol. Surv., 22d Ann. Rept., pt. 6, pp. 507–630, pls. xxxvii–xlix, figs., 227–235, 1902.
- 250 **Davis** (William M.). La peneplaine.
Annal. de Géog., Paris, vol. 8, pp. 289–303, 385–405, figs. 1–6, 1899.
See no. 1387 in U. S. Geol. Surv., Bull. no. 188.
- 251 ——— The drainage of cuestas.
London Geol. Assoc., Proc., vol. 16, pp. 75–93, figs. 1–16, 1899.
Cites some American physiographic features in illustration.
- 252 ——— Les enseignements du Grand Canyon du Colorado.
La Géog., Soc. de Géog., Paris, Bull., vol. 4, pp. 339–351, figs. 42–45, 1901.
Describes geologic and physiographic features of the Grand Canyon of the Colorado.
- 253 ——— Baselevel, grade and peneplain.
Jour. Geol., vol. 10, pp. 77–109, 1902.
Discusses the use of these words and the meanings that have been given them.
- 254 ——— Field work in physical geography.
Jour. Geog., vol. 1, pp. 17–24, 62–69, 1902.
Discusses the differences between geography and geology.

- 255 **Davis** (William M.). The terraces of the Westfield River, Mass.
 Am. Jour. Sci., 4th ser., vol. 14, pp. 77-94, pl. iv, figs. 1-5, 1902.
 Describes the local features of these terraces and discusses their origin.
- 256 — River terraces in New England.
 Harv. Coll., Mus. Comp. Zool., Bull., vol. 38, pp. 281-346, 42 text figs., 1902.
 Discusses the formation of river terraces.
- 257 — Current notes on physiography.
 Science, new ser., vol. 15, pp. 74-75, 1902.
 Contains an abstract of the Washington Folio of the U. S. Geological Survey.
- 258 — The walls of the Colorado Canyon.
 Abstract: Science, new ser., vol. 15, p. 87, 1902.
- 259 — The effect of the shore line on waves.
 Abstract: Science, new ser., vol. 15, p. 88, 1902.
- 260 — Current notes on physiography.
 Science, new ser., vol. 15, pp. 154-156, 1902.
 Contains an abstract of a paper by Hershey on the 'Geology of the central portion of the Isthmus of Panama.'
- 261 — Current notes on physiography.
 Science, new ser., vol. 15, pp. 234-235, 1902.
 Contains abstracts of papers by Collie on the physiography of Wisconsin.
- 262 — Current notes on physiography.
 Science, new ser., vol. 16, pp. 636-637, 1902.
 Discusses a paper by Newsom on 'Drainage of southern Indiana,' and gives an abstract of paper by Jaggar, 'The laccoliths of the Black Hills.'
- 263 — Current notes on physiography.
 Science, new ser., vol. 16, pp. 748-749, 1902.
 Gives an abstract of paper by Marbut on 'The evolution of the northern part of the lowlands of southeastern Missouri.'
- 264 — Current notes on physiography.
 Science, new ser., vol. 16, pp. 914-915, 1902.
 Gives an abstract of a paper by J. E. Todd on the 'Hydrographic history of South Dakota.'
- 265 — Current notes on physiography.
 Science, new ser., vol. 16, pp. 995-996, 1902.
 Gives an abstract of Daly's report on 'The geology of the northeast coast of Labrador.'
- 266 **Davison** (J. M.). Internal structure of cliftonite.
 Am. Jour. Sci., 4th ser., vol. 13, pp. 467-468, 1902.
 Describes occurrence and crystallographic characters.

- 267 **Dawson** (George M.). Summary report on the operations of the Geological Survey of Canada for the year 1900.
Can. Geol. Surv., Summ. Rept. for 1900, 203 pp., map, 1901.
- 268 — Summary report on the operations of the Geological Survey for the year 1899 by the Director.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 1A-224A, 1902.
- 269 **Day** (David T.). Mineral resources of the United States, 1899. Metallic products, coal, and coke.
U. S. Geol. Surv., 21st Ann. Rept., pt. 6, 656 pp., 1901.
- 270 — Mineral resources of the United States, 1899. Nonmetallic products, except coal and coke.
U. S. Geol. Surv., 21st. Ann. Rept., pt. 6 (con.), 634 pp., 1901.
- 271 — Mineral resources of the United States. Calendar year 1900.
U. S. Geol. Surv., Min. Res. of U. S. for 1900, 927 pp., 1901.
- 272 — Mineral resources of the United States. Calendar year 1901.
U. S. Geol. Surv., Min. Res. of U. S. for 1901, 996 pp., 1902.
- 273 **Dean** (Bashford). Historical evidence as to the origin of the paired limbs of vertebrates.
Am. Nat., vol. 36, pp. 767-776, 1 fig., 1902.
Describes the evidence of paleontology on the subject.
- 274 — Biometric evidence in the problem of the paired limbs on the vertebrates.
Am. Nat., vol. 36, pp. 837-846, 1 fig., 1902.
Discusses studies of the development of paired limbs.
- 275 — The preservation of muscle-fibres in sharks of the Cleveland shale.
Am. Geol., vol. 30, pp. 273-278, pls. viii-ix, 1902.
Discusses the processes by which the delicate structures are preserved.
- 276 — [Review of] 'Bibliography and Catalogue of the Fossil Vertebrata of North America' by Oliver Perry Hay.
Science, new ser., vol. 16, pp. 701-703, 1902.
Contains critical notes on nomenclature and paleontology.
- 277 **Dennis** (W. B.). A borax mine in southern Oregon.
Eng. & Mg. Jour., vol. 73, pp. 581-582, 2 figs., 1902.
Contains brief description of the deposit.
- 278 **Dickson** (C. W.). The concentration of barium in limestone.
School of Mines Quart., vol. 23, pp. 366-370, 1902.
- 279 **Diller** (Joseph Silas). The copper region of northern California.
Eng. & Mg. Jour., vol. 73, pp. 857-858, 1 fig., 1902; Science, new ser., vol. 15, p. 823, 1902.
Describes the occurrence of auriferous quartz veins and copper deposits of the region.

- 280 **Diller** (Joseph Silas). Copper in northern California.
Mg. & Sci. Pres., vol. 85, pp. 62, 72, 1902.
Discusses the geologic occurrence of copper ores.
- 281 — Volcanic rocks in Martinique and St. Vincent, collected by Robert T. Hill and Israel C. Russell.
Nat. Geog. Mag., vol. 13, pp. 285-296, 1902.
Describes the microscopic characters of these specimens.
- 282 — The wreck of Mt. Mazama [Oregon].
Science, new ser., vol. 15, pp. 203-211, 1902.
Sketches the geologic history and formation of the Cascade Range, describes the formation and wrecking of Mt. Mazama, and discusses the evidences for the manner of its wrecking.
- 283 — Volcanic dust from Guatemala.
Abstract: Science, new ser., vol. 16, p. 1029, 1902.
- 284 — Topographic development of the Klamath Mountains.
U. S. Geol. Surv., Bull. no. 196, 69 pp., 13 pls., 7 figs., 1902.
A supplement contains notes on the geologic age of some of the rocks of the Klamath Mountains.
- 285 — and **Patton** (Horace Bushnell). The geology and petrography of Crater Lake National Park [Oregon].
U. S. Geol. Surv., Professional Paper no. 3, 167 pp., 19 pls., 2 figs., 1902.
Describes the physiographic and dynamic geology of the region and the occurrence and characters of the igneous rocks.
- 286 — and **Steiger** (George). Volcanic dust and sand from St. Vincent caught at sea and the Barbados.
Science, new ser., vol. 15, pp. 947-950, 1902.
Describes the characters and composition of this material.
- 287 **Dixon** (C. W.). Note on the condition of nickel in nickeliferous pyrrhotite from Sudbury [Ontario].
Eng. & Mg. Jour., vol. 73, p. 660, 1902.
Contains notes on the concentration of some of these ores.
- 288 **Dodge** (R. E.), and others. New York City Folio—New York—New Jersey.
See Merrill (F. J. H.) and others, 770.
- 289 **Donald** (J. T.). The limestone of the Philipsburg Railway and Coal Company.
Eng. & Mg. Jour., vol. 73, p. 657, 1902.
Describes the occurrence and chemical composition of the limestones.
- 290 **Douglass** (Earl). A Cretaceous and Lower Tertiary section in south central Montana.
Am. Phil. Soc., Proc., vol. 41, pp. 207-224, pl. xxix, 1902.
Describes the lithologic and faunal characters of the beds exposed along the Musselshell River, and discusses the problem of the transition from Mesozoic to Cenozoic time.

- 291 **Douglass** (Earl). Fossil mammalia of the White River beds of Montana.
Am. Phil. Soc., Trans., new ser., vol. 20, pp. 237-279, pl. ix, map, 1902.
Describes the characters of the strata and of the fossil mammals collected.
- 292 — Dinosaurs in the Ft. Pierre shales and underlying beds in Montana.
Science, new ser., vol. 15, pp. 31-32, 1902.
Discusses the occurrence of the fossils and the character and origin of the beds in which they are found.
- 293 — The discovery of Torrejon mammals in Montana.
Science, new ser., vol. 15, pp. 272-273, 1902.
- 294 **Dowling** (D. B.). The west side of James Bay.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 107-115, 1902.
Describes the author's observations in this area.
- 295 **Dresser** (John A.). A petrographical contribution to the geology of the eastern townships of the Province of Quebec.
Am. Jour. Sci., 4th ser., vol. 14, pp. 43-48, 1902.
Describes the pre-Cambrian igneous rocks that are regarded as similar to the volcanics of South Mountain, Pa.
- 296 — The copper-bearing volcanic rocks in the eastern townships of the Province of Quebec.
Can. Mg. Inst., Jour., vol. 5, pp. 81-86, 1902; Eng. & Mg. Jour., vol. 73, p. 412, 3 figs., 1902.
- 297 — Petrography of Sheffield and Brome Mountains [Canada].
Can. Geol. Surv., Summ. Rept. for 1901, pp. 183-187, 1902.
Describes petrologic and other observations.
- 298 **Duerden** (J. E.). Aggregated colonies in Madreporarian corals.
Am. Nat., vol. 36, pp. 461-471, figs. 1-3, 1902.
Describes the process of fixation and development of larvæ of the West Indian coral *Siderastræa radians*.
- 299 — Boring algæ as agents in the disintegration of corals.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 323-332, pl. xxxii, 1902.
Reviews the literature and discusses the chemical and physical processes by which the disintegration is effected.
- 300 — Relationships of the Rugosa (Tetracoralla) to the living Zoanthææ.
Johns Hopkins Univ. Circ., vol. 21, no. 155, pp. 19-25, 12 text figs., 1902; Ann. Mag. Nat. Hist., 7th ser., vol. 9, pp. 381-398, 12 figs., 1902.
- 301 — The morphology of the Madreporaria.
Johns Hopkins Univ. Circ., vol. 21, no. 157, pp. 59-66, 13 text figs., 1902; Ann. Mag. Nat. Hist., 7th ser., vol. 10, pp. 96-115, 13 text figs., pp. 382-393, 4 text figs., 1902.

- 302 **Duerden** (J. E.). The development of septa in the Paleozoic corals.
Abstract: Science, new ser., vol. 15, p. 350, 1902.
- 303 **Duffield** (M. S.). The Cumberland Plateau coal field [Tennessee].
Eng. & Mg. Jour., vol. 74, pp. 442-443, 2 figs., 1902.
Describes the geology of this area and gives a geological section of the Cumberland Plateau.
- 304 **Dumble** (Edwin T.). Notes on the geology of southeastern Arizona.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 696-715, 1902.
Describes the occurrence of Cenozoic, Mesozoic and Paleozoic strata of Cochise County, Arizona, and gives a general section of the rocks.
- 305 — [In discussion of paper by A. F. Lucas "The great oil-well near Beaumont, Texas."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 1029-1032, 1902.
- 306 — A Carboniferous coal in Arizona.
Am. Geol., vol. 30, p. 270, 1902.
Describes the occurrence and gives a list of fossils.
- 307 — The Tertiary of the Sabine River.
Science, new ser., vol. 16, pp. 670-671, 1902.
Discusses the correlation of Tertiary formations in Texas and Louisiana.
- 308 — The red sandstone of the Diabolo Mountains, Texas.
Texas Acad. Sci., Trans., vol. 4, pt. 2, nos. 6-7, pp. 1-3 (103-105), 1902.
Discusses the stratigraphic position of this formation.
- 309 — Cretaceous and later rocks of Presidio and Brewster counties [Texas].
Texas Acad. Sci., Trans., vol. 4, pt. 2, nos. 6-7, pp. 1-8 (107-114), 1902.
Describes the geologic structure of this region and gives sections of the strata.

E.

- 310 **Eakle** (Arthur G.). Colemanite from southern California.
Univ. Cal., Dept. Geol., Bull., vol. 3, pp. 31-50, pls. ii-iv, 1902.
Describes the crystals and the method of measurement with the two-circle goniometer.
- 311 **Eastman** (Charles R.). On Campyloprion, a new form of Edestus-like dentition.
Geol. Mag., dec. iv., vol. 9, pp. 148-152, pl. viii and fig. 3 (in text), 1902.
- 312 — The Carboniferous fish fauna of Mazon Creek, Illinois.
Jour. Geol., vol. 10, pp. 535-541, 5 figs., 1902.
Describes two species of Acanthodes and one each of Coelacanthus and Elonichthys, and gives a list of the vertebrates found at this locality.

- 313 **Eastman** (Charles R.). On the genus *Peripristis*, St. John.
Geol. Mag., dec. iv., vol. 9, pp. 388-391, 2 text figs., 1902.
- 314 — Some Carboniferous cestraciont and acanthodian sharks.
Harvard Coll., Mus. Comp. Zool., Bull. vol. 39, pp. 55-99, pls. i-vii,
figs. 1-14, 1902.
- 315 — Phylogeny of the cestraciont group of sharks.
Abstract: Science, new ser., vol. 16, p. 267, 1902.
- 316 — Some hitherto unpublished observations of *Orestes* St. John
on Paleozoic fishes.
Am. Nat., vol. 36, pp. 653-659, figs. 1-4, 1902.
Contains notes on *Dinichthys pustulosus* and *Edestus* and *Cochliodus*.
- 317 — Notice of interesting new forms of Carboniferous fish
remains.
Am. Nat., vol. 36, pp. 849-854, 2 figs., 1902.
Describes material from the Carboniferous of the Mississippi Valley.
- 318 — and **Barbour** (E. H.). Synopsis of the Missourian and
Permo-Carboniferous fish fauna of Kansas and Nebraska.
Abstract: Science, new ser., vol. 16, pp. 266-267, 1902.
- 319 **Easton** (S. A.). Notes on Tonopah, Nevada.
Eng. & Mg. Jour., vol. 73, p. 697, 1902.
Contains notes on the geology of the region and the occurrence of the
gold ores.
- 320 **Eavenson** (H. N.). The Connellsville region. Its mineral
resources—the extent of territory—the methods of mining
and amount of output.
Mines & Minerals, vol. 23, pp. 26-29, 1902.
- 321 **Eckel** (Edwin C.). Chapters on the cement industry in New York.
N. Y. State Mus., Bull. no. 44, pp. 849-955, pls. lxxxvi-ciii, map in
pocket, 1901.
Describes character of materials and processes of manufacture of cement
in New York.
- 322 — The quarry industry in southeastern New York.
N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r141-r176, pls. xlii-lxi,
1902.
- 323 — The classification of the crystalline cements.
Am. Geol., vol. 29, pp. 146-154, 1902.
- 324 — The preparation of a geologic map.
Jour. Geol., vol. 10, pp. 50-66, 1902.
- 325 — Summaries of the literature of structural materials. I.
Jour. Geol., vol. 10, pp. 442-449, 1902.

- 326 **Eckel** (Edwin C.). Summaries of the literature of structural materials. II.
Jour. Geol., vol. 10, pp. 542-550, 1902.
- 327 **Edman** (J. A.). Corundum in Montana.
Mg. & Sci. Press, vol. 84, p. 21, 1902.
Brief notes on occurrence.
- 328 **Edwards** (Henry W.). Notes on the geology of the Isthmus of Panama.
Eng. & Mg. Jour., vol. 73, pp. 862-863, 1902.
Contains general notes on the rocks of the region.
- 329 **Edwards** (J. Jep.). Paleontology of Bartholomew County, Indiana, mammalian fossils.
Ind. Acad. Sci., Proc. for 1901, pp. 247-248, 1902.
Discusses the occurrence of Quaternary mammalian remains.
- 330 **Eggleston** (J. W.). Some glacial remains near Woodstock, Conn.
Am. Jour. Sci., 4th ser., vol. 13, pp. 403-408, 1902.
Describes local glacial features.
- 331 **Eldridge** (George H.). The petroleum industry of California.
Eng. & Mg. Jour., vol. 73, p. 41, 1902.
Describes the general developments in 1901.
- 332 **Ells** (R. W.). The Carboniferous basin in New Brunswick.
Can. Roy. Soc., Proc. and Trans., 2d ser., vol. 7, sect. iv, pp. 45-56, 1901.
Discusses the geologic structure and location of coal seams in this area.
- 333 — Report on the geology and natural resources of the area included in the map of the city of Ottawa and vicinity.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 1G-48G, 5 pls., map, 1902.
Describes geologic structure and formations and economic minerals of this area.
- 334 — Report on the geology of Argenteuil, Ottawa, and part of Pontiac counties, Province of Quebec, and portions of Carleton, Russell, and Prescott counties, Province of Quebec.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 1J-138J, 5 pls., map, 1902.
- 335 — The district around Kingston, Ontario.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 170-183, 1902.
Describes the author's observations in this area.

- 336 **Ells** (R. W.). Marl deposits in Ontario, Quebec, New Brunswick and Nova Scotia.
Ottawa Nat., vol. 16, pp. 59-69, 1902.
Describes the general character and distribution of the deposits.
- 337 **Elmore** (C. J.). A comparison of fossil diatoms from Nebraska with similar deposits at St. Joseph, Mo., and at Denver, Colo.
Nebr. St. Hist. Soc., Proc. and Coll., 2d ser., vol. 2, pp. 238-242, 1898.
Gives lists of species identified from Tertiary deposits.
- 338 **Elrod** (Moses N.). Niagara group unconformities in Indiana.
Ind. Acad. Sci., Proc. for 1901, pp. 205-215, 3 figs., 1902.
- 339 **Emerson** (Benjamin Kendall). Note on corundum and a graphitic essonite from Barkhamsted, Conn.
Am. Jour. Sci., 4th ser., vol. 14, pp. 234-236, 1902.
Describes the occurrence and characters of garnet and corundum.
- 340 — Two cases of metamorphosis without crushing.
Am. Geol., vol. 30, pp. 73-76, 1902.
Describes an amygdaloidal amphibolite and a porphyritic mica schist.
- 341 — Holyokeite, a purely feldspathic diabase from the Trias of Massachusetts.
Jour. Geol., vol. 10, pp. 508-517, 1902.
Describes the mineralogic and chemical characters of the rocks.
- 342 **Emerson** (Harrington). The coal resources of the Pacific.
Eng. Mag., vol. 23, pp. 161-182, 18 figs., 1902.
Contains notes on the distribution of coal in this region.
- 343 **Emerson** (J. S.). Some characteristics of Kau [Hawaii].
Am. Jour. Sci., 4th ser., vol. 14, pp. 431-439, 1902.
Describes the physiography of the region and discusses the evidences regarding the source of certain eruptions.
- 344 **Emmons** (N. H.). The value of ores in Mexico.
Mg. & Sci. Press., vol. 84, p. 102, 1902.
- 345 **Emmons** (Samuel Franklin). The Delamar and the Horn-Silver mines; two types of ore-deposits in the deserts of Nevada and Utah.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 658-683, 10 figs, 1902.
Describes topography and geologic structure of the region, characters of the ore and history and development of these mines.
- 346 — [In discussion of "The origin of ore-deposits."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 953-959, 1902.
- 347 — Clarence King.
Am. Jour. Sci., 4th ser., vol. 13, pp. 224-237, 1902.
Includes an account of his life and work and a bibliography of his publications.

- 348 **Emmons** (Samuel Franklin). Tributes to Clarence King.
Eng. & Mg. Jour., vol. 73, pp. 3-5, por., 1902.
Gives an account of his life and work and a list of his publications.
- 349 — The U. S. Geological Survey in its relation to the practical miner.
Eng. & Mg. Jour., vol. 74, p. 43, 1902.
- 350 — [Discussion of James W. Malcolmson's paper on 'The Sierra Mojado, Coahuila, Mexico, and its ore-deposits.']
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 566-567, 1902.
Discusses the age of the beds, the structure of the mountains, and the distribution of the ores.

F.

- 351 **Fairbanks** (H. W.). Lake Chelan, Washington.
Abstract: Science, new ser., vol. 15, pp. 412-413, 1902.
Describes physiographic changes which have taken place in this region.
- 352 **Fairchild** (Herman LeRoy). Pleistocene geology of western New York, report of progress for 1900.
N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r103-r139, pls. ix-xli, 1902.
Discusses the occurrence and deformation of the Iroquois shore line and gives results of recent studies in the Syracuse-Oneida and Cattaraugus-Chautauqua districts.
- 353 **Falconer** (J. D.). Volcanic dust from the West Indies.
Nature, vol. 66, p. 132, 1902.
Brief note on the character of the dust from recent eruptions.
- 354 **Fall** (Delos). Marls and clays in Michigan.
Mich. Miner., vol. 3, no. 11, pp. 11-14, 1901.
Discusses occurrence of materials in Michigan for making Portland cement.
- 355 **Faribault** (E. R.). Nova Scotia gold fields.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 214-221, 1902.
Describes observations in this area.
- 356 **Farrington** (Oliver Cummings). Meteorite studies.
Field Col. Mus., Geol. ser., vol. 1, pp. 283-315, pls. xliii-xlvi, 6 text figs., 1902.
Describes meteorites from Kansas, Mexico and Ohio.
- 357 — A new meteorite from Kansas.
Science, new ser., vol. 16, pp. 67-68, 1902.
Gives an account of the discovery and characters of this meteorite.
- 358 — The meteorites of northwestern Kansas.
Abstract: Science, new ser., vol. 16, p. 260, 1902.

- 359 **Farrington** (Oliver Cummings), **Briggs** (Elmer S.) and The Dinosaur beds of the Grand River Valley of Colorado.
See Briggs (E. S.) and Farrington (O. C.), 126.
- 360 **Felix** (Johannes) and **Lenk** (Hans). Bemerkungen zur topographie und geologie von Mexico.
Zeitsch. d. deutsch. geol. Gesell., vol. 54, pp. 426-440, 1902.
Contains observations on the topography and geology of Mexico.
- 361 **Fell** (E. Nelson). The Canadian Mining Institute.
Eng. & Mg. Jour., vol. 73, p. 411, 1902.
- 362 **Fellows** (A. L.). Water resources of the State of Colorado.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 74, 151 pp., 14 pls., 5 figs., 1902.
- 363 **Fenneman** (N. M.). On the lakes of southeastern Wisconsin.
Wis. Geol. & Nat. Hist. Surv., Bull. no. 8, 178 pp., 36 pls., 1902.
Discusses the geology, physiography, and formation of lakes of this region.
- 364 — Development of the profile of equilibrium of the subaqueous shore terrace.
Jour. Geol., vol. 10, pp. 1-32, figs. 1-10, 1902.
- 365 — The Arapahoe glacier in 1902 [Colorado].
Jour. Geol., vol. 10, pp. 839-851, figs. 1-8, 1902.
Describes the moraines and crevasses of this glacier.
- 366 **Finch** (G. E.). A terrace formation in the Turkey River Valley, in Fayette County, Iowa.
Iowa Acad. Sci., Proc., vol. 8, pp. 204-206, pl. viii, 1901.
Describes the structure and formation of the bluffs.
- 367 **Finlay** (George I.). Preliminary report of field work in the town of Minerva, Essex County [New York].
N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r96-r102, pl. viii, 1902.
Describes geologic structure and petrology of this area.
- 368 — The granite area of Barre, Vermont.
Vt. Geol. Surv., Rept. State Geol., III, pp. 46-60, pls. iv-viii, 1902;
(Columbia Univ., Contr. Geol. Dept., vol. 10, no. 87.)
Discusses topography, geology, and petrology of this area.
- 369 — Igneous rocks of the Algonkian series.
Geol. Soc. Am., Bull., vol. 13, pp. 349-352, 1902.
Describes characters and occurrence of igneous rocks of the Algonkian series in Lewis and Livingston ranges, Montana.
- 370 **Fishback** (P. J.). Geological horizon of the petroleum in southeast Texas and southwest Louisiana.
Eng. & Mg. Jour., vol. 74, p. 476, 1902.

- 371 **Fisher** (Cassius A.). Directory of the limestone quarries of Nebraska.

Nebr. St. Bd. Agr., Ann. Rept. for 1901, pp. 243-247, 1902.

- 372 — Discovery of the Laramie in Nebraska.

Am. Geol., vol. 30, pp. 315-316, pl. xviii, 1902.

Describes occurrence and relations of the Laramie in southeastern Nebraska.

- 373 — **Barbour** (Erwin H.) and. A new form of calcite-sand crystal.

See Barbour (E. H.) and Fisher (C. A.), 56.

- 374 — **Barbour** (Erwin H.) and. The geological bibliography of Nebraska.

See Barbour (E. H.) and Fisher (C. A.), 55.

- 375 **Fletcher** (Hugh). Geological nomenclature in Nova Scotia.

Nova Scotian Inst. Sci., Trans., vol. 10, pp. 323-329, 1902.

Discusses the age of the New Glasgow conglomerate.

- 376 — Kings and Hants counties, Nova Scotia.

Can. Geol. Surv., Summ. Rept. for 1901, pp. 208-214, 1902.

Describes the author's observations in this area.

- 377 **Flett** (John Smith). Note on a preliminary examination of the ash that fell on Barbados after the eruption at St. Vincent [West Indies]. With a chemical analysis by Dr. William Pollard.

London Geol. Soc., Quart. Jour., vol. 58, pp. 368-369, 1902.

- 378 — **Anderson** (Tempest) and. Preliminary report on the recent eruption of the Soufrière in St. Vincent, and of a visit to Mont Pelée, in Martinique.

See Anderson (Tempest) and Flett (J. S.), 35.

- 379 **Flink** (Gust.). Berättelse om en mineralogisk resa i Syd-Groenland sommaren 1897.

Meddelelser om Groenland, vol. 14, pp. 221-262, pls. viii-ix, 1898.

Describes minerals and rocks obtained from Greenland.

- 380 — On the minerals from Narsarsuk on the firth of Tunugdliarfik in southern Greenland.

Meddelelser om Groenland, vol. 24, pp. 7-180, pls. i-ix, 1901.

Describes character and occurrence of minerals in this area.

- 381 **Fluker** (W. H.). Gold mining in McDuffie County, Georgia.

Eng. & Mg. Jour., vol. 73, pp. 725-726, 1902.

Contains general notes on the geology and gold ores of the county.

- 382 **Foerste** (August F.). The Cincinnati anticline in southern Kentucky.
Am. Geol., vol. 30, pp. 359-369, pl. xxvi, 1902.
Describes the relations of the Devonian, Silurian, and Ordovician formations along the Cincinnati anticline.
- 383 — Bearing of the Clinton and Osgood formations on the age of the Cincinnati anticline.
Abstract: Science, new ser., vol. 15, p. 90, 1902.
- 384 — Use of the terms Linden and Clifton limestones in Tennessee geology.
Abstract: Science, new ser., vol. 15, p. 90, 1902.
- 385 **Ford** (W. E.). On the chemical composition of dumortierite.
Am. Jour. Sci., 4th ser., vol. 14, pp. 426-430, 1902.
- 386 **Forsyth** (Alexander). [In discussion of paper by J. D. Irving "Wolframite in the Black Hills of South Dakota."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 1024-1025, 1902.
- 387 **Fowke** (Gerard). The preglacial drainage of Ohio—introduction.
Ohio State Acad. Sci., Special Papers, no. 3, pp. 5-9, 1900.
Reviews work previously done in deciphering preglacial drainage as an introduction to papers following.
- 388 — Preglacial drainage conditions in the vicinity of Cincinnati [Ohio].
Ohio State Acad. Sci., Special Papers, no. 3, pp. 68-75, map, 1900.
- 389 **Frazer** (Persifor). Alphabetical cross reference catalogue of all the publications of Edward Drinker Cope, from 1859 till his death in 1897.
Soc. Cient. Ant. Alz., Mem., vol. 14, pp. 39-72, 233-256, 439-466, 1899-1900; vol. 15, pp. 31-96, 1900.
- 390 — Sketch of Dr. Frenzel.
Am. Geol., vol. 30, pp. 333-335, 1902.
- 391 — Compte rendu, 8 Congrès Géologique International, Paris, 1900.
Am. Geol., vol. 29, pp. 110-112, 1902.
- 392 — Catalogue chronologique des publications de Edward Drinker Cope.
Soc. Geol. de Belgique, Annales, vol. 29, pp. BB3-77, 1902.
- 393 **Frizell** (Joseph P.). Tidal scour in harbors, or the function of tidal basins with special reference to the Harbor of Boston.
Assoc. Eng. Soc., Jour., vol. 28, pp. 78-85 and 88, 1902.
Contains notes on deposition in harbors and its removal by tidal scour.

- 394 **Fuller** (Myron L.). Etching of quartz in the interior of conglomerates.

Jour. Geol., vol. 10, pp. 815-821, figs. 1-3, 1902.

Discusses the evidences as to the cause and the conditions during the etching.

- 395 — The Gaines oil field of northern Pennsylvania.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 573-627, pls. xxxvi-xliii, figs. 55-61, 1902.

Describes location, topography, extent and development of the field, location and productiveness of wells, character and geologic occurrence of oil-producing sands and the stratigraphy and geologic structure of this area.

- 396 — The Catskill rocks in northern Pennsylvania.

Abstract: Science, new ser., vol. 15, pp. 664-665, 1902.

- 397 — and **Ashley** (George H.). Ditney Folio—Indiana.

U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 84, 1902.

Describes geographic and topographic features, general geologic relations, Carboniferous formations and Quaternary deposits, and economic resources, chiefly coal.

- 398 **Fulton** (Charles H.). The cyanide process in the Black Hills of South Dakota.

S. Dak. School of Mines, Bull. no. 5, pp. 1-77, pl., 1902.

G.

- 399 **Gannett** (Henry). Geography of Alaska.

Harriman Alaska Expedition, vol. 2, pp. 257-277, 1902.

- 400 **Gaudry** (Albert) and **Barrois** (Charles). Congrès géologique international; comptes rendus de la VIII session, en France.

2 vols.: pp. 1-1314, pls. i-xxii, figs. 1-84, Paris, 1901. Review: Am. Jour. Sci., 4th ser., vol. 13, pp. 67-68, 1902.

- 401 **Gay** (Ware B.). [In discussion of paper on "The Richmond coal-basin, Virginia," by J. B. Woodworth.]

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 1011-1012, 1902.

- 402 **Gilbert** (Grove Karl). On some joint veins.

Abstract: Science, new ser., vol. 15, pp. 84-85, 1902.

- 403 — John Wesley Powell.

Science, new ser., vol. 16, pp. 561-567, por., 1902.

A sketch of his life and work.

- 404 — and **Brigham** (Albert Perry). An introduction to physical geography.

New York, D. Appleton and Company. 380 pp., 263 figs., 1902.

Bull. 221—03—4

- 405 **Gilmore** (Charles W.). Discovery of teeth in *Baptanodon*, an Ichthyosaurian from the Jurassic of Wyoming.
Science, new ser., vol. 16, pp. 913-914, 1902.
- 406 — **Peterson** (O. A.) and. *Elosaurus parvus*; a new genus and species of the Sauropoda.
See Peterson (O. A.) and Gilmore (C. W.), 851.
- 407 **Gilpin** (Edwin, Jr.). The building stones of Nova Scotia
Stone, vol. 24, pp. 122-128, 1902.
- 408 **Girty** (George H.). The Upper Permian in western Texas.
Am. Jour. Sci., 4th ser., vol. 14, pp. 363-368, 1902.
Describes the lithologic and faunal characters of the carboniferous section examined by Shumard in 1855, and proposes the geographic term Guadalupian for the Permian strata of the region.
- 409 — See Lane (A. C.), 646.
- 410 **Goodwin** (J. C.). Reformed copper ores.
Mg. & Sci. Press., vol. 85, pp. 60, 75, 85, 1902.
Discusses the occurrence and origin of copper ore deposits.
- 411 **Gordon** (Charles H.). The Port Huron oil field [Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 269-281, 1902.
Contains well records of this field and the adjoining region in Canada.
- 412 — Wave-cutting on west shore of Lake Huron, Sanilac County, Mich.
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 283-290, pls. xi-xv, figs. 5-7, 1902; Mich. Miner, vol. 4, no. 12, pp. 10-14, ill., 1902.
Describes the recent encroachment of the lake upon the land.
- 413 **Gordon** (Reginald). Bones of a mastodon found.
Science, new ser., vol. 16, p. 594, 1902.
Describes the occurrence of remains of a mastodon near Newburgh, New York.
- 414 — Tree trunks found with mastodon remains.
Science, new ser., vol. 16, p. 1033, 1902.
Describes occurrence of remains of trunks of trees near Newburgh, New York.
- 415 **Grabau** (Amadeus W.). Guide to the geology and paleontology of Niagara Falls and vicinity.
N. Y. State Mus., 54th Ann. Rept., vol. 4, 1902.
See no. 306 in U. S. Geol. Surv., Bull. no. 203.
- 416 — Studies of gastropoda.
Am. Nat., vol. 36, pp. 917-945, figs. 1-8, 1902; Columbia Univ., Geol. Dept., Contr., vol. 10, no. 89, 1902.
Describes stages of development of gastropods.

- 417 **Grabau** (Amadeus W.) Stratigraphy of the Traverse group of Michigan.
 Mich. Geol. Surv., Ann. Rept. for 1901, pp. 163-210, pls. vii-viii, figs. 2-3, 1902; Columbia Univ., Geol. Dept., Contr., vol. 10, no. 89, 1902.
 Describes the character and occurrence of the subdivisions of this group and includes lists of fossils at various horizons and localities.
- 418 — The Geological Society of America [Proceedings and abstracts of papers].
 Science, new ser., vol. 15, pp. 81-91, 1902.
- 419 — **Shimer** (Henry W.) and. Hamilton group of Thedford, Ontario.
 See Shimer (H. W.) and Grabau (A. W.), 963.
- 420 **Grant** (C. C.). Opening address, geological section [Hamilton Scientific Association], for session 1901-1902.
 Hamilton Sci. Assoc., Jour. & Proc., no. 18, pp. 33-42, 1902.
 Contains notes on fossils collected near Hamilton, Ontario.
- 421 — Coral reefs—modern and ancient.
 Hamilton Sci. Assoc., Jour. & Proc., no. 18, pp. 43-45, 1902.
 Notes the occurrence of fossil corals in Ontario.
- 422 — Geological notes—(continued).
 Hamilton Sci. Assoc., Jour. & Proc., no. 18, pp. 48-52, 1902.
 Contains notes on the occurrence of fossils near Hamilton, Ontario.
- 423 **Grant** (Ulysses Sherman). Junction of Lake Superior sandstone and Keweenaw traps in Wisconsin.
 Abstract: Geol. Soc. Am., Bull., vol. 13, pp. 6-9, 1901.
 Reviews previous investigations and discusses the contact phenomena and the character of the sedimentary rocks.
- 424 — Lake Superior iron ore deposits.
 Am. Geol., vol. 29, pp. 47-51, 1902.
 Reviews recent literature on these ores.
- 425 — See Winchell (N. H.), 1168.
- 426 **Gratacap** (L. P.). Paleontological speculations. III.
 Am. Geol., vol. 29, pp. 290-301, 1902.
- 427 — The great Jurassic dinosaur.
 Sci. Am., vol. 86, p. 5, 3 figs., 1902.
 Describes the vertebrate animal life of the Jurassic and the occurrence of remains in Wyoming.
- 428 **Greene** (George K.). Contribution to Indiana paleontology, Part IX.
 New Albany, Ind., pp. 75-84, pls. xxv-xxvii, 1902.
 Describes new species of Devonian corals and [R. R.] Rowley describes new species of Devonian Echinodermata.

- 429 **Greene** (George K.). Contribution to Indiana paleontology, Part X.
New Albany, Ind., pp. 85-97, pls. xxviii-xxx, 1902.
Contains descriptions of new corals from the Devonian by Greene and of new species of echinoderms from the Carboniferous and Devonian by Rowley.
- 430 **Gregory** (W. M.) Preliminary report on Arenac County and parts of Ogemaw, Iosco and Alcona counties [Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 11-29, 1902.
Describes the occurrence of limestone, gypsum, coal, water supply and clays in these counties.
- 431 — Geological Survey of Michigan: Preliminary report on Arenac, Ogemaw, Iosco and Alcona counties.
Mich. Miner, vol. 4, no. 3, pp. 11-15, 1902.
Discusses the economic geology of this area.
- 432 **Griffith** (William). The anthracite of the Third Hill Mountain, West Virginia.
Franklin Inst., Jour., vol. 154, pp. 431-439, 1 fig., 1902.
Contains notes on the general geology of the region and the recurrence and character of coal.
- 433 **Griswold** (W. T.) The Berea Grit oil sand in the Cadiz quadrangle, Ohio.
U. S. Geol. Surv., Bull. no. 198, 43 pp., 1 pl., 1 fig., 1902.
Describes the occurrence of petroleum and the method used in constructing a contour map of the Berea Grit oil sand in this area.
- 434 **Gulliver** (F. P.) Joint meetings of the Geological Society of America, Section E, and the National Geographic Society.
Science, new ser., vol. 16, pp. 258-268, 1902.
Gives titles and abstracts of papers read at the meeting at Pittsburgh, Pa., July 1 to 3, 1902.
- 435 **Gwillim** (J. C.) Report on the Atlin mining district, British Columbia.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 1B-48B, 5 pls., map, 1902.
Discusses physiographic features, geologic structure and petrology of this area, and character and distribution of the gold-bearing gravels.
- 436 — Characteristics of the Atlin gold-field [British Columbia].
Can. Mg. Review, vol. 21, pp. 13-16, 1902.
Describes the general topography and geology of the region and the occurrence of placer gold.
- 437 — Glaciation in the Atlin district, British Columbia.
Jour. Geol., vol. 10, pp. 182-185, 1902.
Describes the valleys and local glaciers of the region.

H.

- 438 **Hall** (Christopher W.) Exploration for gold in the central States.
Lake Superior Mg. Inst., Proc., pp. 49-60 [1898?].
Discusses occurrences of gold.
- 439 — The geology of Minnesota.
Int. Mg. Cong., 4th session, Proc., pp. 165-171, 1901.
Describes the geologic formations of the State and the occurrence of economic minerals in each of them.
- 440 **Halse** (Edward). Notes on the structure of ore-bearing veins in Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 285-302, figs. 1-26, 1902.
- 441 — Gems and precious stones of Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 568-569, 1902.
Contains notes on the occurrence of precious stones in Mexico.
- 442 **Hamilton** (S. Harbert). [Notes on the geology and physiography of Cuba.]
Phila., Acad. Nat. Sci., Proc., vol. 54, pp. 744-749, 1902.
- 443 **Harper** (Henry Winston). A contribution to the chemistry of some of the asphalt rocks found in Texas.
Texas Univ. Mineral Surv., Bull. no. 3, pp. 108-129, 2 pls., 1902.
Discusses the nomenclature of asphalt and presents the results of analyses of many samples.
- 444 **Harper** (Roland M.). *Taxodium distichum* and related species, with notes on some geological factors influencing their distribution.
Torrey Bot. Club, Bull., vol. 29, pp. 381-399, 1902.
Discusses the influence of certain geologic formations upon the geographic distribution of these plants.
- 445 — Notes on the Lafayette and Columbia formations and some of their botanical features.
Science, new ser., vol. 16, pp. 68-70, 1902.
Discusses the use of plants growing in soils derived from these formations in identifying the presence of the latter where surface outcrops are not available.
- 446 **Harrington** (Bernard J.). George Mercer Dawson.
Can. Rec. Sci., vol. 8, pp. 413-425, por., 1902.
Gives a sketch of Dr. Dawson's life and work.
- 447 **Harrington** (M. W.). See Winchell (N. H.), 1168.

- 448 **Harris** (Gilbert D.). The geology of the Mississippi embayment with special reference to the State of Louisiana.
La. Geol. Surv., pt. 6, pp. 5-39, pls. i-x, figs. 1-7, 1902.
Describes the orographic movements at the close of the Cretaceous, and the character and distribution of the Eocene, Oligocene, Miocene and Quaternary series in the region.
- 449 — Subterranean waters of Louisiana.
La. Geol. Surv., pt. 6, pp. 203-252, pls. xlii-xliii, figs. 20-25, 1902.
Describes the character and occurrence of the Cretaceous and Tertiary beds, and gives sections of many well borings and analyses of the waters.
- 450 — Oil in Louisiana.
La. Geol. Surv., pt. 6, pp. 265-275, pl. xlv, fig. 27, 1902.
Gives sections and data regarding the horizons of the oil-bearing sands.
- 451 **Haseltine** (Robert M.). The bituminous coal field of Ohio.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 215-226, pl. xiii, 1902.
Describes extent of field, character, composition, occurrence and production of coals.
- 452 — **White** (David), **Campbell** (Marius R.) and. The northern Appalachian coal field.
See White (David), Campbell (M. R.), and Haseltine (R. M.), 1120.
- 453 **Hatcher** (J. B.). On some new and little known fossil vertebrates.
Carnegie Mus., Annals., vol. 1, no. 1, pp. 128-144, pls. i-iv, 1901.
- 454 — On the cranial elements and the deciduous and permanent dentitions of *Titanotherium*.
Carnegie Mus., Annals., vol. 1, no. 2, pp. 256-262, 1 text fig., pls. vii-viii, 1901.
- 455 — *Sabal rigida*; a new species of palm from the Laramie.
Carnegie Mus., Annals., vol. 1, no. 2, pp. 263-264, 1 fig., 1901.
- 456 — The Jurassic Dinosaur deposits near Canyon City, Colorado.
Carnegie Mus., Annals., vol. 1, no. 2, pp. 327-341, 1901.
Describes the mode of occurrence of the saurian remains near Canyon City and the geology of the strata in which found.
- 457 — A mounted skeleton of *Titanotherium dispar* Marsh.
Carnegie Mus., Annals., vol. 1, no. 3, pp. 347-355, pls. xvi-xviii, 1902.
- 458 — Structure of the fore limb and manus of *Brontosaurus*.
Carnegie Mus., Annals., vol. 1, no. 3, pp. 356-376, 14 text figs., pls. xix-xx, 1902.
- 459 — The genera and species of the Trachodontidae (Hadrosauridae, Claosauridae) Marsh.
Carnegie Mus., Annals., vol. 1, no. 3, pp. 377-386, 1902.

- 460 **Hatcher** (J. B.) Oligocene Canidae.
Carnegie Mus., Mem., vol. 1, no. 2, pp. 65-108, 7 text figs., 20 pls., 1902.
- 461 ——— Origin of the Oligocene and Miocene deposits of the Great Plains.
Am. Phil. Soc., Proc., vol. 41, pp. 113-131, 1902.
Discusses the character, distribution, origin and correlation of these strata.
- 462 ——— Discovery of a musk ox skull (*Ovibos cavifrons* Leidy), in West Virginia, near Steubenville, Ohio.
Science, new ser., vol. 16, pp. 707-709, 1902.
- 463 ——— A correction of Professor Osborn's note entitled "New vertebrates of the Mid-Cretaceous."
Science, new ser., vol. 16, pp. 831-832, 1902.
Contains notes on the locality of species of *Ornithomimus* and the age of the Judith River beds.
- 464 **Haverstock** (R. S.). Quicksilver.
Mg. & Sci. Press., vol. 84, p. 4, 1902.
Contains general notes on the occurrence and treatment of quicksilver ores, with descriptions of California deposits.
- 465 **Haworth** (Erasmus). Geology and mining interests of Kansas.
Int. Mg. Cong., 4th session, Proc., pp. 196-200, 1901.
Describes the occurrence of economic minerals in the State.
- 466 ——— Oil and gas in Kansas.
Eng. & Mg. Jour., vol. 73, p. 37, 1902.
Describes the developments in oil and gas in 1901.
- 467 **Hay** (Oliver Perry). Description of a new species of *Baëna* (*B. hatcheri*) from the Laramie beds of Wyoming.
Carnegie Mus., Annals., vol. 1, no. 2, pp. 325-326, pl. xv, 1902.
- 468 ——— Snoutfishes of Kansas.
Abstract: Am. Geol., vol. 29, pp. 192-193, 1902.
- 469 ——— Description of a new species of *Cladodus* (*C. formosus*) from the Devonian of Colorado.
Am. Geol., vol. 30, pp. 373-374, fig. 1, 1902.
- 470 ——— Bibliography and catalogue of the fossil vertebrata of North America.
U. S. Geol. Surv., Bull. no. 179, 868 pp., 1902.
- 471 **Haycock** (Ernest). The geological history of the Gaspereau Valley, Nova Scotia.
Nova Scotian Inst. Sci., Trans., vol. 10, pp. 361-375, pl. vii, 1902.
Discusses the geologic history and structure of this area.

- 472 **Haycock** (Ernest). Fossils, possibly Triassic, in glaciated fragments in the boulder-clay of Kings County, Nova Scotia.
Nova Scotian Inst. Sci., Trans., vol. 10, pp. 376-378, 1902.
- 473 **Hayes** (Charles Willard), **Vaughan** (T. W.) and **Spencer** (A. C.). Report on a geological reconnaissance of Cuba. Washington, 1901.
123 pp., 29 pls., 17 figs.
Describes the physiography, the general character and distribution of the igneous and sedimentary rocks, the geologic history and occurrence of gold, copper, manganese, iron, asphalts, oil and coal.
- 474 **Hayes** (Charles Willard). The asphalt deposits of Pike County, Arkansas.
Eng. & Mg. Jour., vol. 74, p. 782, 1902.
Contains notes on the geologic occurrence and gives a section of the strata.
- 475 — Rome Folio—Georgia-Alabama.
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 78, 1902.
Describes the geographic and topographic features, the general geologic structure, the character and occurrence of Cambrian, Silurian, Devonian, Carboniferous and Neocene (?) strata, and the occurrence of iron, bauxite, slate and limestone.
- 476 — The coal fields of the United States.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 7-24, pl. i (map), 1902.
Describes character, distribution and geologic occurrence of coal in the United States.
- 477 — The southern Appalachian coal field.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 227-263, pls. xiii-xv, fig. 26, 1902.
Describes extent, general geologic relations, structure and stratigraphy of the field, the character and occurrence of the coal beds, the composition, properties and production of coal.
- 478 — Some facts and theories bearing on the accumulation of petroleum.
Abstract: Science, new ser., vol. 16, p. 1028, 1902.
- 479 **Hayes** (Seth). The Shaw mastodon: an examination and description of mastodon and accompanying mammalian remains found near Cincinnati, June, 1894.
Ohio State Acad. Sci., 3d Ann. Rept., pp. 37-41, 1 pl. [1895].
- 480 **Hedburg** (Eric). The Missouri and Arkansas zinc-mines at the close of 1900.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 379-404, 5 figs. (map and sections), and discussion pp. 1022-1023, 1902.
Reviews the mining industry of this district, and discusses geologic position and origin of the ores.

- 481 **Heine** (R. E.). The water resources of Washington. Water power.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 308-320, pls. xxx-xxxii, 1902.
- 482 **Herrick** (C. L.). Applications of geology to economic problems in New Mexico.
Int. Mg. Cong., 4th session, Proc., pp. 61-64, 1901.
Describes some of the geologic features and the occurrence of economic minerals of the region.
- 483 **Hershey** (Oscar H.). The significance of the term Sierran.
Am. Geol., vol. 29, pp. 88-95, 1902.
Discusses the recent earth movements in the Sierra Nevada region and the use of the terms Ozarkian and Sierran.
- 484 — Some crystalline rocks of southern California.
Am. Geol., vol. 29, pp. 273-290, 1902.
Describes the character, occurrence and distribution of probable pre-Paleozoic crystalline granites, schists, etc., and of certain quartzite and limestone strata in this region.
- 485 — Some Tertiary formations of southern California.
Am. Geol., vol. 29, pp. 349-372, 1902.
Describes volcanic and sedimentary beds of the region.
- 486 — The significance of certain Cretaceous outliers in the Klamath region, California.
Am. Jour. Sci., 4th ser., vol. 14, pp. 33-37, 1902.
Describes the occurrence and character of the Cretaceous sediment and the geological history of this region.
- 487 — Boston Mountain physiography.
Jour. Geol., vol. 10, pp. 160-165, 1902.
Discusses topographic development of west central Arkansas and reviews a paper by A. H. Purdue on "Physiography of the Boston Mountain, Arkansas."
- 488 — Neocene deposits of the Klamath region, California.
Jour. Geol., vol. 10, pp. 377-392, 1902.
Describes the occurrence of these deposits and the conditions under which they were accumulated.
- 489 — The Quaternary of southern California.
Univ. Cal., Dept. Geol., Bull., vol. 3, pp. 1-30, pl. i, 1902.
Describes orographic movements, erosion phenomena and deposits of Quaternary time in this region.
- 490 — A supposed early Tertiary peneplain in the Klamath region, California.
Science, new ser., vol. 15, pp. 951-954, 1902.
Discusses the evidences for the ancient peneplain character of the region and the date of formation of the peneplain.

- 491 **Herzer** (H.). *Psaronius*.
Ohio State Acad. Sci., 5th Ann. Rept., pp. 55-58, 1897.
Gives description and critical remarks upon this fossil plant.
- 492 — Six new species, including two new genera, of fossil plants.
Ohio State Acad. Sci., 9th Ann. Rept., pp. 22-29, 2 figs., 3 pls., 1901.
- 493 — A new fossil sponge from the Coal Measures [Ohio].
Ohio State Acad. Sci., 9th Ann. Rept., pp. 30-31, pl. iv, 1901.
- 494 — New fossil plants from the Carboniferous and Devonian.
Ohio State Acad. Sci., 10th Ann. Rept., pp. 40-48, 3 figs., 3 pls., 1902.
- 495 — New fossils from the Carboniferous, Hamilton and Medina shales.
Ohio State Acad. Sci., 10th Ann. Rept., pp. 49-66, pls. iv-x, 1902.
- 496 **Hilgard** (E. W.). The debris fans of the arid region in their relation to the water supply.
Abstract: Science, new ser., vol. 15, p. 414, 1902.
Describes the structure of fans at the mouths of canyons and their relations to water supply.
- 497 **Hill** (Benjamin F.). The Terlingua quicksilver deposits, Brewster County, Texas.
Texas Univ. Mineral Surv., Bull. no. 4, 74 pp., 21 pls., 10 figs., 1902.
Gives a brief account of the physiography, geologic structure and occurrence of the Cretaceous and igneous rocks. Describes the character and occurrence of the quicksilver deposits and associated minerals and discusses the mode of occurrence of the ores.
- 498 — See Phillips (W. B.), 853.
- 499 **Hill** (Robert T.). Geography and geology of the Black and Grand prairies, Texas, with detailed descriptions of the Cretaceous formations and special reference to artesian waters.
U. S. Geol. Surv., 21st Ann. Rept., pt. 7, 666 pp., 71 pls., 80 figs., 1901.
Describes physiographic and drainage features, the character and occurrence of Azoic, Cambrian, Ordovician, Carboniferous, Permian-Triassic and Cretaceous rocks and the conditions and occurrence of artesian waters. The nomenclature, classification, correlation, character and occurrence of the Cretaceous rocks are described in detail, with numerous sections, faunal lists and figures of characteristic fossils and typical exposures, and the geography and conditions of deposition prevailing in Cretaceous times are discussed.
- 500 — The geographic and geologic features, and their relation to the mineral products, of Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 163-178, figs. 1-2, 1902.

- 501 **Hill** (Robert T.). The Beaumont oil-field with notes on other oil-fields of the Texas region.
Franklin Inst., Jour., vol. 154, pp. 143-156, figs. 1-2, pp. 225-238, 263-281, 1902.
Describes the occurrence and geologic relations of the oil bearing strata of Texas.
- 502 — [Report to the National Geographic Society on volcanic disturbances in the West Indies.]
Nat. Geog. Mag., vol. 13, pp. 225-267, 14 figs., 1902.
Contains an account of the author's observations of the phenomena attending the eruptions in 1902.
- 503 — The upland placers of La Cienega, Sonora, Mexico.
Eng. & Mg. Jour., vol. 73, pp. 132-134, 7 figs., 1902.
Describes the occurrence of the gold and the method of dry washing.
- 504 — The cinnabar deposits of the Big Bend province of Texas.
Eng. & Mg. Jour., vol. 74, pp. 305-307, 4 figs., 1902.
Describes the geologic occurrence of the cinnabar deposits in this area.
- 505 — and **Vaughan** (T. Wayland). Austin Folio—Texas.
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 76, 1902.
Describes geographic and topographic features, general geologic relations, the character and occurrence of Cretaceous, Tertiary and Quaternary formations, and the occurrence of economic products.
- 506 **Hille** (F.). The iron ore deposits of western Ontario and their genesis.
Can. Mg. Inst. Jour., vol. 5, pp. 49-61, 6 pls., 1902.
Describes the geologic and geographic position of the ore deposits and discusses their formation.
- 507 **Hillebrand** (W. F.). Chemical discussion of analyses of volcanic ejecta from Martinique and St. Vincent.
Nat. Geog. Mag., vol 13, pp. 296-299, 1902.
- 508 — The composition of yttrialite, with a criticism of the formula assigned to thalénite.
Am. Jour. Sci., 4th ser., vol. 13, pp. 145-152, 1902.
Discusses Benedicks' formula for thalénite and presents the author's results of the chemical properties of yttrialite.
- 509 — and **Penfield** (S. L.). Some additions to the alunite-jarosite group of minerals.
Am. Jour. Sci., 4th ser., vol. 14, pp. 211-220, 1902.
Describes the crystallographic and chemical characters of minerals from Nevada and New Mexico.
- 510 **Hills** (R. C.). Eocene and earlier beds of the Huerfano Basin, Colorado, and their relation to the Cretaceous.
Abstract: Science, new ser., vol. 15, p. 417, 1902.
Discusses the correlation of these beds.

- 511 **Hitchcock** (C. H.). The Mohokea caldera on Hawaii.
Abstract: Science, new ser., vol. 16, p. 260, 1902.
- 512 **Hobbs** (William Herbert). The old tungsten mine at Trumbull, Conn.
U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 7-22, pls. i-v, fig. 1, 1901.
Describes petrology, geologic structure, and occurrence of ore bodies of this locality.
- 513 — Emigrant diamonds in America.
Smithsonian Inst., Ann. Rept. for 1901, pp. 359-366, 2 figs., 3 pls., 1902. Reprinted from Pop. Sci. Monthly, vol. 56, 1899.
Describes the occurrence of diamonds in glacial materials, principally in Wisconsin.
- 514 — Still rivers of western Connecticut.
Geol. Soc. Am., Bull., vol. 13, pp. 17-26, pls. i-ii, figs. 1-3, 1901.
Describes the peculiar drainage features of the region and the conditions determining the course of the rivers, and discusses the theories that have been advanced.
- 515 — Former extent of the Newark system.
Geol. Soc. Am., Bull., vol. 13, pp. 139-148, figs. 1-5, 1902.
Gives a summary of the views of various geologists regarding this series, and discusses the conditions under which the beds were deposited.
- 516 — The mapping of the crystalline schists. Part I. Methods.
Jour. Geol., vol. 10, pp. 780-792, 1 pl., 1 fig., 1902.
Describes methods of studying the occurrence, character and relations of crystalline schists.
- 517 — The mapping of the crystalline schists. II. Basal assumptions.
Jour. Geol., vol. 10, pp. 858-890, figs. 1-11, 1902.
Discusses the mechanics of deformation and the criteria for recognizing folds and faults.
- 518 — An instance of the action of the ice sheet upon slender projecting rock masses.
Am. Jour. Sci., 4th ser., vol. 14, pp. 399-403, pl. ix, figs. 1-2, 1902.
Describes the glacial phenomena in the Pomperaug Valley (Connecticut).
- 519 — A new meteorite from Algoma, Kewaunee County, Wisconsin.
Abstract: Science, new ser., vol. 16, p. 260, 1902.
- 520 **Hodgdon** (F. W.). [In discussion of paper by J. P. Frizell on "Tidal scour in harbors, etc."]
Assoc. Eng. Soc., Jour., vol. 28, pp. 85-87, 1902.
Contains notes on scour in Boston Harbor.

- 521 **Hoffman** (G. Christian). Report of the section of chemistry and mineralogy.
Can. Geol. Sur., Ann. Rept., new ser., vol. 12, pp. 1R-64R, 1902.
- 522 — On the occurrence of chrompicotite in Canada.
Am. Jour. Sci., 4th ser., vol. 13, pp. 242-243, 1902.
Describes its occurrence, characters, and chemical composition.
- 523 **Hole** (Allen D.), **Moore** (Joseph) and. Concerning well-defined ripple marks in the Hudson River limestone, Richmond, Indiana.
See Moore (J.) and Hole (A. D.), 786.
- 524 **Hollick** (Arthur). Geological and botanical notes, Cape Cod and Chappaquidick Island, Mass.
N. Y. Bot. Garden, Bull., vol. 2, no. 7, pp. 381-407, pls. xl-xli, fig. 1, 1902.
Describes the general geologic and botanical features of these localities.
- 525 — and others. New York City Folio—New York-New Jersey.
See Merrill (F. J. H.), and others, 770.
- 526 **Holmes** (W. H.). Fossil human remains found near Lansing, Kansas.
Am. Anthropol., new ser., vol. 4, pp. 743-752, pls. xxxi, xxxii, figs. 28, 29, 1902.
Discusses the age of the deposits in which the human remains were found at Lansing, Kansas.
- 527 **Hopkins** (A. D.). Work of the prehistoric scolytid, *Phlæosinus squalidens* Scudd.
Can. Geol. Surv., Cont. to Paleont., vol. 2, pt. 2, pp. 91-92, pls. xiv-xv, 1900.
- 528 **Hopkins** (Thomas C.). Clays and clay industries of Pennsylvania. II. Clays of southeastern Pennsylvania (in part).
Pa. St. Coll., Ann. Rept., 1898-99, Appendix, 76 pp., 5 pls., 1 fig., [1900?].
Describes character and occurrence of clays and their products manufactured in the State.
- 529 — Clays and clay industries of Pennsylvania. III. Clays of the Great Valley and South Mountain areas.
Pa. St. Coll., Ann. Rept., 1899-1900, Appendix, 45 pp., [1901?].
Describes character and occurrence of clays and products manufactured from them.
- 530 — Fireclays of the Coal Measures, a short discussion of their origin, and the causes of the qualities which render them more or less refractory.
Mines & Minerals, vol. 22, p. 296, 1902.

- 531 **Hopkins** (Thomas C.). The Lower Carboniferous area in Indiana.
Abstract: Science, new ser., vol. 15, p. 83, 1902.
- 532 — and **Smallwood** (Martin). On some anticlinal folds [Pennsylvania].
Abstract: Science, new ser., vol. 15, p. 89, 1902.
- 533 **Hovey** (Edmund Otis). The fourteenth annual meeting of the Geological Society of America.
Eng. & Mg. Jour., vol. 73, pp. 101-103, 1902.
- 534 — The paleontological collections of the geological department of the American Museum of Natural History.
Jour. Geol., vol. 10, pp. 252-255, 1902.
- 535 — Observations on the eruptions of 1902 of La Soufrière, St. Vincent and Mt. Pelée, Martinique.
Am. Jour. Sci., 4th ser., vol. 14, pp. 319-358, pl. viii, figs. 1-18, 1902.
Describes the eruptions in 1902 and the character of the material ejected.
- 536 — The eruptions of La Soufrière, St. Vincent, in May, 1902.
Nat. Geog. Mag., vol. 13, pp. 444-459, 4 figs., 1902.
Describes the author's observations.
- 537 — A visit to Martinique and St. Vincent after the great eruptions of May and June, 1902.
Am. Mus., Jour., vol. 2, pp. 57-63, 3 pls., 1902.
- 538 — Martinique and St. Vincent; a preliminary report upon the eruptions of 1902.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 333-372, pls. xxxiii-li (pl. xxxiv, map), 1902.
Describes the phenomena of these eruptions and the extent of the devastation.
- 539 **Hrdlička** (Aleš). The crania of Trenton, New Jersey, and their bearing upon the antiquity of man in that region.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 23-62, pls. i-xxii, 3 tables, 1902.
Describes the occurrence and character of the remains.
- 540 **Hubbard** (Lucius L.) Two new geological cross-sections of Keweenaw Point [Michigan].
Lake Superior Mg. Inst., Proc., vol. 2, pp. 79-96 [1894?].
Describes the geology of this area and gives a section of the strata.
- 541 — The relation of the vein at the Central mine, Keweenaw Point, to the Kearsarge conglomerate [Michigan].
Lake Superior Mg. Inst., Proc., vol. 3, pp. 74-83, 4 pls. [1895?].

- 542 **Hubbard** (Lucius L.). Work of the Geological Survey in the Upper Peninsula [Michigan].
Mich. Miner., vol. 3, no. 3, p. 9, 1901.

- 543 **Hulst** (Nelson P.). The geology of that portion of the Menominee Range, east of the Menominee River [Michigan].
Lake Superior Mg. Inst., Proc. for 1893, pp. 19-28, 2 figs., geol. map [1893?].
Describes the geologic structure and occurrence of ores in this area.

I.

- 544 — **Iddings** (Joseph P.), **Cross** (Whitman), **Pirsson** (Louis V.), and **Washington** (Henry S.). A quantitative chemico-mineralogical classification and nomenclature of igneous rocks.

See Cross (W.), Iddings (J. P.), Pirsson (L. V.), and Washington (H. S.), 228.

- 545 **Ingall** (Elfric Drew). Report on the iron ore deposits along the Kingston and Pembroke Railway in eastern Ontario.
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 1I-91I, 13 pls., 1902.

Gives a summary of the geology and petrology of the area and describes the character and occurrence of the iron ores.

- 546 **Irving** (John Duer). Some recently exploited deposits of wolframite in the Black Hills of South Dakota.

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 683-695, 1 fig. (small geol. map), 1902.

Describes the general geology and occurrence of wolframite in the ore-bearing veins of the region.

J.

- 547 **Jaekel** (O.). Bemerkungen über den beinbau der trilobiten.
Zeitsch. d. deutsch. geol. Gesell., vol. 54, pp. 53-55 (of Brief. Mitt.), 1902.

Discusses criticisms by C. E. Beecher of a paper by the author on the structure of trilobites.

- 548 **Jaggard** (Thomas Augustus). Field notes of a geologist in Martinique and St. Vincent.

Pop. Sci. Mo., vol. 61, pp. 352-368, figs. 1-19, 1902.

Describes recent volcanic phenomena.

- 549 — The next eruption of Pelée.

Science, new ser., vol. 16, pp. 871-872, 1902.

- 550 **Jefferson** (Mark S. W.). Limiting widths of meander belts.

Nat. Geog. Mag., vol. 13, pp. 373-384, 6 figs., 1902.

Describes methods and results of meander studies.

- 551 **Jenney** (Walter P.). The mineral crest.
Eng. & Mg. Jour., vol. 73, pp. 825-826, 1902.
Discusses the occurrence of ore bodies in depth in limestone beneath large masses of barren rock.
- 552 — The mineral crest, or the hydrostatic level attained by the ore-depositing solutions, in certain mining districts of the Great Salt Lake Basin.
Mg. & Sci. Press, vol. 85, p. 297, 1902.
- 553 **Johnson** (Douglas Wilson). Notes of a geological reconnaissance in eastern Valencia County, New Mexico.
Am. Geol., vol. 29, pp. 80-87, pls. ii-iii, 1902.
Describes the general physiographic and geologic features of the region.
- 554 — On some Jurassic fossils from Durango, Mexico.
Am. Geol., vol. 30, pp. 370-372, 1902; Columbia Univ., Geol. Dept., Contr., vol. 10, no. 88, 1902.
Gives a brief description of material collected by E. F. Tuttle.
- 555 **Johnson** (Willard D.). The high plains and their utilization. (Conclusion of paper in Twenty-first Annual Report, Part IV.)
U. S. Geol. Surv., 22d Ann. Rept., pt. 4, pp. 631-669, pls. li-lxv., figs. 236-244, 1902.
Discusses the origin and structure of the region, and its water resources, especially the ground water as a possible source of supply.
- 556 **Johnston** (J. F. E.). Eastern part of the Abitibi region.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 128-141, 1902.
Describes the author's observations in this region.
- 557 **Jones** (F. O.). The formation and geology of the salt deposits.
Sci. Am., vol. 87, p. 59, 3 figs., 1902.
Describes the formation and occurrence of deposits of salt.
- 558 **Jones** (T. Rupert). Notes on Dr. G. F. Matthew's Cambrian Ostracoda from northeastern America.
Geol. Mag., dec. iv, vol. 9, pp. 401-403, 6 text figs., 1902.
- 559 **Julien** (Alexis A.). On pyrite and marcasite.
Science, new ser., vol. 15, pp. 870-872, 1902.

K.

- 560 **Keith** (Arthur). Folded faults in the southern Appalachian.
Abstract: Science, new ser., vol. 15, pp. 822-823, 1902.
- 561 **Kemp** (James Furman). The rôle of the igneous rocks in the formation of veins.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 169-198, 1902.
Discusses mode of occurrence and formation of ores in igneous, sedimentary and metamorphic rocks; and the occurrence of groundwater and the part which it plays in the localization of ore deposits.

- 562 **Kemp** (James Furman). The deposits of copper-ores at Ducktown, Tennessee.

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 244-265, 12 figs., 1902.

Describes briefly topography of Ducktown, mode of occurrence and character of the ore and associated minerals, and possible origin of the ore bodies.

- 563 — The geological relations and distribution of platinum and associated metals.

U. S. Geol. Surv., Bull. no 193, 95 pp., 6 pls., 8 figs., 1902; Columbia Univ., Contr. Geol. Dept., vol. 10, no. 81, 1902.

- 564 — Igneous rocks and circulating waters as factors in ore deposition.

Columbia Univ., Contr. from Geol. Dept., vol. 10, no. 86, 1902.

- 565 **Kendall** (J. D.). Ore in sight.

Inst. Mg. & Metal., Trans., vol. 10, pp. 143-149, figs. 1-7, 1902; Mg. & Sci. Press, vol. 84, pp. 177-178, 1902; Mines & Minerals, vol. 23, pp. 13-14, 5 figs., 1902.

- 566 **Kerr** (Frank M.). The sulphur deposits of Calcasieu Parish, [Louisiana].

Assoc. Eng. Soc., Jour., vol. 28, pp. 90-97, 1902.

Describes the occurrence of the sulphur and presents the record of a boring to a depth of 603 feet.

- 567 **Keyes** (Charles Rollin). Origine eolienne du loess.

Soc. Belge de Geol., de Paleont. et d'Hydrol., Bull., vol. 12, pp. 14-21, 1901.

Discusses the origin of the loess of the Mississippi Valley.

- 568 — Depositional equivalent of hiatus at base of our Coal Measures; and the Arkansan series, a new terrane of the Carboniferous in the western interior basin.

Iowa Acad. Sci., Proc., vol. 8, pp. 119-128, figs. 3-4, 1901.

Discusses evidences of denudation prior to the deposition of the Coal Measures in this area, gives tables comparing the thickness of Coal Measures formations, and describes the Arkansan series.

- 569 — Names of coals west of the Mississippi River.

Iowa Acad. Sci., Proc., vol. 8, pp. 128-137, 1901.

Discusses the Carboniferous deposits of the western interior coal field, tabulates the terranes and percentage of coal production of each, and gives a list of names that have been applied to the coal seams, with place of publication and stratigraphic position.

- 570 — Diverse origins and diverse times of formation of the lead and zinc deposits of the Mississippi Valley.

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 603-611, 1902.

Discusses mode of formation of these ores.

- 571 — [In discussion of "The origin of ore-deposits."]

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 941-944, 962-966, 1902.

- 572 **Keyes** (Charles Rollin). Character and stratigraphical peculiarities of the southwestern Iowa coal fields.
Eng. & Mg. Jour., vol. 73, p. 661, 1902.
Describes the stratigraphic position of these coals.
- 573 — Determination of the Cambrian age [of] the magnesian limestones of Missouri.
Am. Geol., vol. 29, pp. 384-387, 1902.
Reviews previous determinations of the age of these limestones.
- 574 — Geological age of certain gypsum deposits.
Am. Geol., vol. 30, pp. 99-102, 1902.
Discusses the evidences of the age of the Kansas and Iowa gypsum beds.
- 575 — Cartographic representation of geological formations.
Jour. Geol., vol. 10, pp. 691-699, figs. 1-2, 1902.
Discusses the criteria by which formations are discriminated and the methods of their cartographic representation.
- 576 — Devonian interval in Missouri.
Geol. Soc. Am., Bull., vol. 13, pp. 267-292, pl. xlv, 1902.
Discusses the lithologic and faunal characters of the strata and the evidence of unconformities.
- 577 — Magmatic differentiation of rocks.
Science, new ser., vol. 15, pp. 32-33, 1902.
Discusses the formation of the Magnet Cove [Arkansas] igneous mass and the classification of rocks.
- 578 — A Devonian hiatus in the continental interior—its character and depositional equivalents.
Iowa Acad. Sci., Proc., vol. 9, pp. 105-112, 1902.
Discusses the absence of Devonian strata in west central Missouri and the history and meaning of the terms Kinderhook and Chouteau.
- 579 **Killebrew** (J. B.), **Safford** (J. M.) and. The elements of the geology of Tennessee.
See Safford (J. M.) and Killebrew (J. B.), 926.
- 580 **Kimball** (James P.). Bohemia mining district of western Oregon.
Eng. & Mg. Jour., vol. 73, pp. 889-890, 3 figs., 1902.
Contains notes on the geology and mining developments in the district.
- 581 **Kindle** (Edward M.). The Niagara limestones of Hamilton County, Indiana.
Am. Jour. Sci., 4th ser., vol. 14, pp. 221-224, figs. 1-2, 1902.
Describes the lithologic and faunal characters of the limestones and correlates them with the Lockport limestone.
- 582 **Knight** (Nicholas). Some recent analyses of Iowa building stones; also of potable waters.
Iowa Acad. Sci., Proc., vol. 8, pp. 104-109, 1901.

583 **Knight** (Nicholas). Analysis of the Mount Vernon [Iowa] loess.
Am. Geol., vol. 29, p. 189, 1902.

584 **Knight** (Wilbur C.). Further notes on the occurrence of rare metals in the Rambler mine, Wyoming.
Eng. & Mg. Jour., vol. 73, p. 696, 1902.
Contains notes on the occurrence of platinum and other rare metals.

585 — The petroleum fields of Wyoming, III. The fields of Uinta County.
Eng. & Mg. Jour., vol. 73, pp. 720-722, 4 figs., 1902.
Describes the topography, general geology and occurrence of oil in Uinta County.

586 — The Laramie Plains Red Beds and their age.
Jour. Geol., vol. 10, pp. 412-422, 1902.
Reviews the literature of the subject, gives a detailed section in Red Mountain, and discusses the age of the Red Beds and their associated strata.

587 — and **Slosson** (E. E.). The Newcastle oil field [Wyoming].
Wyom. Univ., School of Mines, Petroleum ser.—Bull. no. 5, 25 pp., 1902.
Describes the topography, geology and development of oil of this area.

588 **Knight** (William H.). Address at the presentation of the memorial bronze of Edward Waller Claypole, Throop Polytechnic Institute, Pasadena, Cal., June 2, 1902. (Not seen.)

589 **Knowlton** (Frank Hall). A fossil nut pine from Idaho.
Torreya, vol. 1, pp. 113-115, figs. 1-3, 1901.
Describes *Pinus lindgrenii* n. sp.

590 — Fossil hickory nuts.
Plant World, vol. 4, pp. 51-52, 1901.

591 — A fossil flower.
Plant World, vol. 4, pp. 73-74, 1901.

592 — Fossil sequoias in North America.
Plant World, vol. 4, p. 111, 1901.

593 — Preliminary report on fossil plants from the State of Washington, collected by Henry Landes, 1901.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 32-33, 1902.
Gives lists of species of fossil plants determined.

594 — A fossil nut pine.
Plant World, vol. 5, pp. 33-34, 2 figs., 1902.
Describes *Pinus lindgrenii*.

- 595 **Knowlton** (Frank Hall). Fossil mosses.
Plant World, vol. 5, pp. 243-244, 1902.
Gives a summary of what is known regarding these forms.
- 596 — Notes on the fossil fruits and lignites of Brandon, Vermont.
Torrey Bot. Club., Bull., vol. 29, pp. 635-641, pl. xxv, 1902.
- 597 — Report on a small collection of fossil plants from the vicinity of Porcupine Butte, Montana.
Torrey Bot. Club., Bull., vol. 29, pp. 705-709, fig. 1, pl. xxvi, 1902.
- 598 — Six new species.
Science, new ser., vol. 16, pp. 273-274, 1902.
A critical review of a paper by H. Herzer on "Six new species, including two new genera, of fossil plants," in 9th Ann. Rept. Ohio State Acad. Sci.
- 599 — Fossil flora of the John Day Basin, Oregon.
U. S. Geol. Surv., Bull. no. 204, 153 pp., 17 pls., 1902.
Gives a brief description of the geologic formations and localities of this area, describes the fossil plants, and discusses critically the age and relations to other floras.
- 600 **Koenig** (George A.). The crystallization of mohawkite, domeykite and other similar arsenides.
Lake Superior Mg. Inst., Proc., vol. 7, pp. 62-64 [1901?].
- 601 — On the new species melanochalcite and kweenawite, with notes on some other known species.
Am. Jour. Sci., 4th ser., vol. 14, pp. 404-416, 1902.
Describes occurrence and chemical characters of the material.
- 602 **Kolderup** (Carl Fred.). Guldforekomsterne i Alaska og tilgrænsende strøg. [The occurrence of gold in Alaska and adjacent regions.]
Naturen, Bergen, vol. 25, pp. 361-366, figs. 1-2, 1901.
- 603 — Nordhavets bund og den gamle landbro mellem Island og Grønland. [The bottom of the Arctic Ocean and the old bridge between Iceland and Greenland.]
Naturen, Bergen, vol. 26, pp. 142-146, 1902.
- 604 — De vulkanske udbrud i Vestindien. [The volcanic eruption in the West Indies.]
Naturen, Bergen, vol. 26, pp. 353-363, figs. 1-3, 1902.
Describes eruptions of La Soufrière in St. Vincent and Mont Pelée in Martinique.
- 605 **Kraus** (E. H.) and **Reitinger** (J.). Hussakite, a new mineral, and its relation to xenotime.
Am. Geol., vol. 30, pp. 46-55, 1902.
Describes the chemical and crystallographic characters of the material.

- 606 **Kroustchoff** (K. de). Note sur une roche basaltique de la Sierra Verde [Mexico].
Soc. Cient. Ant. Alz., vol. 16, Rev. pp. 17-26, 1901.
- 607 **Krusch** (P.). Ueber eine kupfererzlagerstätte in Nieder-Californien.
Zeitsch. f. prak. Geol., Jahrg. 1899, heft 3, pp. 83-86, 1899.
Describes occurrence of copper ore bodies.
- 608 **Kümmel** (Henry B.). The mining industry [of New Jersey].
N. J. Geol. Surv., Ann. Rept. for 1901, pp. 133-161, 1902.
Contains notes on the occurrence of iron, zinc and copper ores.
609. — and **Weller** (Stuart). The rocks of the Green Pond Mountain region.
N. J. Geol. Surv., Ann. Rept. for 1901, pp. 1-51, 2 figs., 6 pls., 1902.
Describes geologic occurrence and history and geographic distribution of the formations of this area, and gives lists of fossils determined.
- 610 **Kunz** (George F.). Precious stones in the United States in 1901.
Eng. & Mg. Jour., vol. 73, p. 38, 1902.
- 611 — Composition of tourmaline.
Eng. & Mg. Jour., vol. 73, pp. 482-483, 1902.
- 612 — Gems and precious stones of Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 55-93, 1902.
Describes occurrence, properties, etc.

L.

- 613 **Lacroix** (A.). Les roches volcaniques de la Martinique.
Acad. des Sci. [Paris], Compt. rend., vol. 134, pp. 1246-1248, 1902.
- 614 — Sur les cendres des éruptions de la Montagne Pelée de 1851 et de 1902.
Acad. des Sci. [Paris], Compt. rend., vol. 134, pp. 1327-1329, 1902.
Describes characters of volcanic ashes ejected from Mont Pelée.
- 615 — Les roches volcaniques de la Martinique.
Acad. des Sci. [Paris], Compt. rend., vol. 134, pp. 1369-1371, 1902.
Describes characters of volcanic material from Martinique.
- 616 **Laflamme** (—). Geological exploration of Anticosti [Canada].
Can. Geol. Surv., Summ. Rept. for 1901, pp. 188-194, 1902.
Describes the author's observations upon the island.
- 617 **Laguerenne** (Teodoro L.). Estado de Tabasco [Mexico].
Soc. Cient. Ant. Alz., Mem., vol. 17, pp. 125-131, 1902.
Describes topographic and geologic features and mineral deposits of this State.

- 618 **Lakes** (Arthur). The Buckhorn mine and the San Luis Park, Colorado. Peculiar formations which contain some ores and present a striking appearance.
Mines & Minerals, vol. 22, pp. 322-323, 3 figs., 1902.
- 619 — Oil in Colorado, the geology of the deposits, and the various horizons in which signs of oil have been found.
Mines & Minerals, vol. 22, pp. 256-257, 1902.
- 620 — A lesson on faults. Sketch of the Aspen mining region, Colorado, in which the effects of faulting in the past, and still going on, are shown.
Mines & Minerals, vol. 22, pp. 341-343, 6 figs., 1902.
- 621 — The coal, graphite and oil fields of Raton, New Mexico. The location and geological character. The coal mines.
Mines & Minerals, vol. 22, pp. 350-352, 5 figs., 1902.
- 622 — The western oil field of Mesa and Rio Blanco counties, Colorado. A region geologically favorable for oil.
Mines & Minerals, vol. 22, pp. 388-389, 4 figs., 1902.
Describes the general geology of the region.
- 623 — Geology along the Animas River, with descriptions of coal and metal mines along its course, including a sketch of the Silver Lake mine [Colorado].
Mines & Minerals, vol. 22, pp. 398-399, 3 figs., 1902.
Describes the character and occurrence of the coal and associated strata.
- 624 — Natural gas in Colorado, a description of some of its occurrences and the conditions which point to the probability of its existence.
Mines & Minerals, vol. 22, pp. 417-418, 2 figs., 1902.
- 625 — Prospecting for oil in the region of the cliff dwellers of southeastern Colorado.
Mines & Minerals, vol. 22, pp. 438-440, 3 figs., 1902.
Describes the general geology and structure of the region.
- 626 — The Spanish peaks. Coal region in southern Colorado. An illustration of the effects of volcanic action on coal seams.
Mines & Minerals, vol. 22, pp. 463-464, 4 figs., 1902.
Gives a summary of R. C. Hill's description of the region.
- 627 — Crestone mining district in San Luis Park, Colorado. A region containing some good veins favorably situated for economical mining.
Mines & Minerals, vol. 22, pp. 467-468, 3 figs., 1902.

- 628 **Lakes** (Arthur). Glacial placer beds on the flanks of the Mosquito Range, South Park, Colorado.
Mines & Minerals, vol. 22, p. 469, 1 fig., 1902.
- 629 — Prospecting for coal in the western States—points of resemblance and points of difference between the western and eastern coal fields.
Mines & Minerals, vol. 22, pp. 506-507, 2 figs., 1902.
- 630 — The prairie region of northeastern Colorado. A description of some interesting geological occurrences near Sterling.
Mines & Minerals, vol. 22, p. 510, 2 figs., 1902.
Describes the Tertiary strata of the region.
- 631 — Faults in metal mines. The different types and their various manifestations, their effects upon ore deposition.
Mines & Minerals, vol. 22, pp. 541-542, 6 figs., 1902.
- 632 — Volcanoes. The manner of their eruption, their effect upon the deposition of minerals.
Mines & Minerals, vol. 22, pp. 554-556, 4 figs., 1902.
- 633 — South Park, Colorado. A description of its geology and economic resources in gold, silver, lead, coal and oil.
Mines & Minerals, vol. 23, pp. 78-79, 1902.
Describes the general geology of the region.
- 634 — Prospecting for oil in Wyoming. A description of the prospects in the country around Medicine Butte, and Red Mountain, Uinta County.
Mines & Minerals, vol. 23, pp. 99-100, 2 figs., 1902.
Describes the Cretaceous and Tertiary strata of the region.
- 635 — Great Salt Lake Basin. A description of the terraces which show the shores of the ancient lake when it was much larger than now.
Mines & Minerals, vol. 23, pp. 112-113, 2 figs., 1902.
- 636 — Sketching the characteristic features of rocks.
Sci. Am. Suppl., vol. 74, p. 22339, 1902.
- 637 **Lambe** (Lawrence M.). Notes on a turtle from the Cretaceous rocks of Alberta [Canada].
Ottawa Nat., vol. 15, pp. 63-67, pls. iii-vi, 1901.
- 638 — A revision of the genera and species of Canadian Palæozoic corals: the *Madreporaria* *Aporosa* and the *Madreporaria* *Rugosa*.
Can. Geol. Surv., Contr. to Can. Paleont., vol. 4, pt. 2, pp. 97-197, pls. vi-xviii, 1901.

- 639 **Lambe** (Lawrence M.). New genera and species from the Belly River series (Mid-Cretaceous).
Can. Geol. Surv., Contr. Can. Paleont., vol. 3, pt. 2, pp. 23-81, pls. i-xxi, 1902.
- 640 — Red Deer River, Alberta [Canada].
Can. Geol. Surv., Summ. Rept. for 1901, pp. 80-81, 1902.
Discusses the author's field work at this locality.
- 641 — On *Trionyx foveatus*, Leidy, and *Trionyx vagans*, Cope, from the Cretaceous rocks of Alberta [Canada].
Can. Geol. Surv., Summ. Rept. for 1901, pp. 81-86, pls. i-iv, 1902.
Describes characters and occurrence of these fossil chelonians.
- 642 **Landes** (Henry). An outline of the geology of Washington.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 11-35, 5 pls., 1902.
Discusses the topography and geologic formations found in the State of Washington.
- 643 — The non-metalliferous resources of Washington, except coal.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 161-213, pls. xiii-xvii, 1902. Stone, vol. 24, pp. 521-525; vol. 25, pp. 24-30, 125-127, 1902.
- 644 — The coal deposits of Washington.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 257-281, pls. xxii-xxvii, 1902.
Discusses the geologic position and distribution of the coals of the State of Washington.
- 645 — **Thyng** (William S.), **Lyon** (D. A.) and **Roberts** (Milnor). The metalliferous resources of Washington, except iron.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 39-157, pls. vi-ix, 1902.
- 646 **Lane** (Alfred C.). Annual report of the State geologist [Michigan].
Mich. Miner, vol. 3, pp. 13-22, 1901.
Summarizes the geological work done in Michigan.
- 647 — Suggestion from the State geologist.
Mich. Miner, vol. 3, no. 10, p. 9, 1901.
Proposes to substitute the term Saginaw for Jackson as applied to coal beds in Michigan, and Antrim for St. Clair as applied to Upper Devonian shales of Thunder Bay and Grand Traverse Bay regions.
- 648 — The economic geology of Michigan in its relation to the business world.
Mich. Miner, vol. 4, no. 1, pp. 9-15, 1901.
- 649 — Asphalt in Delta County, Michigan.
Eng. & Mg. Jour., vol. 73, p. 50, 1902.
Gives a section of the Ordovician strata and describes the character of the asphalt material.

- 650 **Lane** (Alfred C.). Subsurface geology [Alcona County, Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 64-76, geol. map and sections, 1902.
Describes the character of the Carboniferous and Devonian rocks as exhibited by the well records and the possible occurrence of oil and gas.
- 651 — Economic geology [of Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 121-137, 1902.
- 652 — Limestones [of Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 141-159, 1902.
Describes the character, composition and occurrence of limestones in Michigan.
- 653 — Deep wells and prospects for oil and gas [Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 211-237, pl. x, 1902.
Gives notes on well records in various parts of the State.
- 654 — Geological map of Michigan.
Mich. Geol. Surv., Ann. Rept. for 1901, opp. p. 224, 1902.
- 655 — Salt [Michigan].
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 241-242, 1902.
Contains brief notes on well records and analyses of the brines.
- 656 — Geothermal gradient.
Mich. Geol. Surv., Ann. Rept. for 1901, pp. 244-251, 1902.
Contains notes on surface and underground temperatures.
- 657 — Coal of Michigan: its mode of occurrence and quality.
Mich. Geol. Surv., vol. 8, pt. 2, pp. 1-232, 9 pls., 9 figs., map, 1902.
Describes the geologic occurrence, composition and mining of coal in the Lower Peninsula of Michigan.
- 658 — The northern interior coal field.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 307-331, pls. xx, xxi, figs. 28-32, 1902.
Describes extent, geologic relations and structure of the field, the character and occurrence of the coal beds, the properties, composition and development of the coal.
- 659 — Variation of geothermal gradient in Michigan.
Abstract: Science, new ser., vol. 15, p. 88, 1902.
- 660 **Langworthy** (A. E.). The Atchison [Kansas] diamond-drill prospect hole.
Kans. Acad. Sci., Trans., vol. 17, pp. 45-52, 1901.
Gives record of boring, discusses strata penetrated and includes analyses of coal.
- 661 **Launay** (L. de). [In discussion of "The origin of ore-deposits."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 947-951, 1902.

- 662 **Lawson** (Andrew C.). The Eparchæan interval: a criticism of the use of the term Algonkian.
Univ. Cal., Dept. Geol., Bull., vol. 3, pp. 51-62, 1902.
Discusses the application of the terms Archæan and Algonkian, the correlation of their formations and defines the term Eparchæan interval.
- 663 — Third annual meeting of the Cordilleran section of the Geological Society of America [Proceedings and abstracts of papers].
Science, new ser., vol. 15, pp. 410-417, 1902.
- 664 — A geological section of the middle Coast Ranges of California.
Abstract: Science, new ser., vol. 15, p. 415, 1902.
Gives a table showing succession and character of geologic formations in the Coast Ranges in the vicinity of the Bay of San Francisco.
- 665 — On an orbicular gabbro from San Diego County, California.
Abstract: Science, new ser., vol. 15, p. 415, 1902.
- 666 — and **Palache** (Charles). The Berkeley Hills [California]. A detail of Coast Range geology.
Univ. Cal., Dept. Geol., Bull., vol. 2, pp. 349-350, pls. x-xvii, map, 1902.
Describes the character, occurrence and relations of the formations of the region, erosion intervals, faults, and the microscopic characters of the volcanic rocks.
- 667 **Lay** (H. C.). Recent geological phenomena in the "Telluride quadrangle" of the U. S. Geological Survey in Colorado.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 558-567, 1902.
Presents the author's observations on the glacial phenomena, earth movements and underground waters of the region.
- 668 **Leach** (W. W.). Crows Nest coal fields.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 67-79, 1902.
Describes the occurrence of coal seams of Cretaceous age in this area.
- 669 **Ledoux** (Albert R.). The production of copper in the Boundary district, B. C.
Can. Mg. Inst. Jour., vol. 5, pp. 171-177, 1902; Mg. & Sci. Press., vol. 84, p. 307, 1902.
Describes the character and occurrence of the ores.
- 670 **Lee** (Harry A.). Colorado: Report, State Bureau of Mines.
310 pp., 1902.
Contains notes on the geologic position and petrology of ore deposits in Colorado.
- 671 **Lee** (Willis T.). The areal geology of the Castle Rock region, Colorado.
Am. Geol., vol. 29, pp. 96-110, pl. iv, 1902.
Describes the occurrence and character of the sedimentary and igneous rocks and the geologic structure of the region.

- 672 **Lee** (Willis T.) The Morrison shales of southern Colorado and northern New Mexico.

Jour. Geol., vol. 10, pp. 36-58, figs. 1-7, 1902.

Describes the general structure of the region, gives detailed sections and discusses the age and equivalency of the shales.

- 673 — Canyons of southeastern Colorado.

Jour. Geog., vol. 1, pp. 357-370, figs. 1-12, 1902.

Includes sections of the strata cut by some of the canyons described.

- 674 — Note on the Carboniferous of the Sangre de Cristo Range, Colorado.

Jour. Geol., vol. 10, pp. 393-396, 1902.

Gives a detailed section in the Sangre de Cristo Range and a list of the fossils collected.

- 675 **Leighton** (Marshall Ora). Sewage pollution in the Metropolitan area near New York City and its effect on inland water resources.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 72, 75 pp., 4 figs., 8 pls., 1902.

- 676 **Leith** (C. K.). Geology of the Mesabi Iron region.

Eng. & Mg. Jour., vol. 73, p. 277, 1902; Science, new ser., vol. 15, p. 351, 1902.

Abstract of paper read before the Geological Society of Washington. Discusses the stratigraphic geology and the origin of the ores.

- 677 — Pre-Cambrian summaries for 1901.

Jour. Geol., vol. 10, pp. 891-913, 1902.

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

N. Y. State Mus., 54th Ann. Rept., vol. 4, 1902.

See no. 493 of U. S. Geol. Surv., Bull. no. 203.

- 679 **Leonard** (A. G.). Report of assistant State geologist [Iowa].

Iowa Geol. Surv., vol. 12, Ann. Rept. for 1901, pp. 28-32, 1902.

Gives record of a boring at Clarinda, Iowa.

- 680 — Geology of Wapello County [Iowa].

Iowa Geol. Surv., vol. 12, Ann. Rept. for 1901, pp. 441-499, pl. xi, figs. 64-78, geol. map, 1902.

Describes physiographic features, geologic structure, and occurrence and utilization of economic products.

- 681 **Lerch** (Otto). A preliminary report upon the hills of Louisiana, north of the Vicksburg, Shreveport and Pacific Railroad.

La. State Experiment Stations; Geol. & Agric., pt. 1, pp. 1-52, 6 figs., 2 pls. [1892?].

Describes topography, drainage and geology of the area and discusses its economic resources.

- 682 **Lerch** (Otto). A preliminary report upon the hills of Louisiana, south of the Vicksburg, Shreveport and Pacific Railroad, to Alexandria, Louisiana.

La. State Experiment Stations; Geol. & Agric., pt. 2, pp. 53-158, 26 figs., 2 pls. (sections) [1893?].

Describes topography, drainage and geology of the area and discusses its economic resources.

- 683 **Leverett** (Frank). Soils of Illinois.

Ill. Bd. of World's Fair Commissioners, Rept., pp. 77-92, 1 pl., 1895.

- 684 — Report on the surface geology of Alcona County, Michigan.

Mich. Geol. Surv., Ann. Rept. for 1901, pp. 35-64, pls. i-ii, geol. map, 1902.

Describes the physiography, glacial deposits and lake history, and the occurrence of marl, clay, and water powers.

- 685 — Glacial formations and drainage features of the Erie and Ohio basins.

U. S. Geol. Surv., Mon. vol. 41, 802 pp., 26 pls., 8 figs., 1902.

Describes physical features, present and former drainage, character and occurrence of drift deposits and the glacial history of the region.

- 686 **Lévy** (Michel). Sur la composition des cendres projetées, le 3 mai 1902, par la Montagne Pelée.

Acad. des Sci. [Paris], Compt. rend., vol. 134, pp. 1123-1124, 1902.

Describes characters of volcanic material ejected from Mont Pelée.

- 687 **Lindgren** (Waldemar). The gold belt of the Blue Mountains of Oregon.

U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 551-776, pls. lxxiii-lxxviii, figs. 79-88, 1901.

Describes topography and drainage, general geologic features, the character and occurrence of Archæan, Paleozoic, Triassic, Neocene and Quaternary strata and intrusive rocks, the character, occurrence and general geologic relations of the ore deposits and minerals, the quartz and placer mining, and production of precious metals in this area.

- 688 — The character and genesis of certain contact deposits.

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 226-244, 1902.

Describes the character, origin and geographic distribution of some ore deposits, discusses contact metamorphism and its cause, and gives a genetic classification.

- 689 — The gold production of North America, its geological derivation and probable future.

Mg. & Sci. Press., vol. 85, pp. 177, 193, 206, 1902.

- 690 — Tests for gold and silver in shales from western Kansas.

Eng. & Mg. Jour., vol. 74, pp. 111-112, 1902.

Describes the author's observations in this region.

- 691 **Lindgren** (Waldemar). Tests for gold and silver in shales from western Kansas.
U. S. Geol. Surv., Bull. no. 202, 21 pp., 1902.
Gives a brief description of the topography and geology and describes tests made to determine presence of gold and silver in certain shales in western Kansas.
- 692 — A deposit of titanite iron ore from Wyoming.
Abstract: Science, new ser., vol. 16, pp. 984-985, 1902.
- 693 **Lippincott** (Joseph Barlow). Storage of water on Kings River. California.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 58, 99 pp., 32 pls., 1902.
- 694 — Development and application of water near San Bernardino, Colton and Riverside, California. Part I.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 59, pp. 1-95, pls. i-xi, 14 figs., 1902.
- 695 — Development and application of water near San Bernardino, Colton and Riverside, California. Part II.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 60, pp. 101-141, 1902.
- 696 **Lobel** (Loicq de). Relation du voyage au Klondyke.
Mus. d'Hist. Nat., [Paris], Bull., vol. 7, pp. 99-103, 1901.
- 697 **Loomis** (F. B.). On Jurassic stratigraphy on the west side of the Black Hills—second paper on American Jurassic stratigraphy.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 401-407, pls. liv-lv, 1902.
Describes the general characters of the Jurassic strata and gives detailed sections.
- 698 **Louderbach** (George D.). General geological features of Nevada and their relationships to the prevailing economic deposits.
Int. Mg. Cong., 4th session, Proc., pp. 200-207, 1901.
- 699 **Lucas** (Anthony F.). The great oil-well near Beaumont, Texas.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 362-374, 2 figs., 1902.
Describes method used in obtaining control of the well, the character of the oil, and gives section passed through in boring.
- 700 **Lucas** (Frederic A.). Animals of the past.
New York, McClure, Phillips & Co. 20 + 258 pp., 41 figs., 1901.
- 701 — The restoration of extinct animals.
Smithsonian Inst., Ann. Rept. for 1900, pp. 479-492, pls. i-viii, figs. 1-2, 1901.

- 702 **Lucas** (Frederic A.) The dinosaurs or terrible lizards.
Smithsonian Inst., Ann. Rept. for 1901, pp. 641-646, 4 pls., 1902.
Reprinted from "Animals of the past."
- 703 — The greatest flying creature, the pterodactyl *Ornithostoma*.
Smithsonian Inst., Ann. Rept. for 1901, pp. 654-659, pls. v-vii, 1902.
- 704 — Paleontological notes—the generic name *Omosaurus*—a new generic name for *Stegosaurus marshi*.
Science, new ser., vol. 16, p. 435, 1902.
Proposes the name *Dacentrurus* for *Omosaurus* Owen, preoccupied, and *Hoplitosaurus* for the author's previously described *Stegosaurus marshi*.
- 705 — Paleontological notes—North American elephantids.
Science, new ser., vol. 15, pp. 554-555, 1902.
Gives notes on the occurrence, characters and synonymy of these fossils.
- 706 — Constructing an extinct monster from fossil remains [*Triceratops*].
Sci. Am., vol. 86, p. 43, 3 figs., 1902.
- 707 — Animals before man in North America.
New York, D. Appleton and Company. 291 pp., ill., 1902.
- 708 **Ludlow** (Edwin). The coal fields of Las Esperanzas, Coahuila, Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 140-156, figs. 1-6, 1902.
Describes the geology of the area, and character and production of the coal (Cretaceous).
- 709 **Luquer** (Lea McL.). On the determination of relative refractive indices of minerals in rock sections by the Becke method.
School of Mines Quart., vol. 33, pp. 127-133, 1902.
- 710 — **Moses** (Alfred J.) and. Notes on recent mineralogical literature.
See Moses (A. J.) and Luquer (L. McL.), 788.
- 711 **Luther** (D. D.). Stratigraphic value of the Portage sandstones.
N. Y. State Mus., Bull. no. 52, pp. 616-631, 1 fig., 1902.
Describes the characters of these beds at various localities and discusses the relations in different sections. Includes a note by J. M. Clarke on the occurrence and relations of the faunas.
- 712 — **Clarke** (J. M.), **Ruedemann** (R.) and. Contact lines of upper Siluric formations on the Brockport and Medina quadrangles [New York].
See Clarke (J. M.), Ruedemann (R.), and Luther (D. D.), 192.

- 713 **Lyman** (Benjamin Smith). Accounting for the depth of the Wyoming buried valley [Pennsylvania].

Phila. Acad. Nat. Sci., Proc., vol. 54, pp. 507-509, 1902.

Discusses explanations offered to account for the depth of the buried valley and advances a new hypothesis.

- 714 **Lyon** (D. A.), **Roberts** (Milnor), **Landes** (Henry), and **Thyng** (William S.). The metalliferous resources of Washington, except iron.

See Landes (H.), Thyng (W. S.), Lyon (D. A.), and Roberts (M.), 645.

M.

- 715 **Mabery** (Charles F.). Composition of Texas petroleum.

Am. Chem. Soc., Jour., vol. 23, pp. 264-267, 1901.

- 716 — The composition of petroleum. On the hydro-carbons in Pennsylvania petroleum with boiling points above 216°.

Am. Acad. Arts & Sci., Proc., vol. 37, pp. 565-595, 1902.

- 717 **McBeth** (William A.). Wabash River terraces in Tippecanoe County, Indiana.

Ind. Acad. Sci., Proc. for 1901, pp. 237-243, 2 figs., 1902.

Describes topographic features and character of glacial deposits in this area and discusses changes in drainage.

- 718 — History of the Wea Creek in Tippecanoe County, Indiana.

Ind. Acad. Sci., Proc. for 1901, pp. 244-247, 2 figs., 1902.

Discusses drainage changes produced in this region by glacial action.

- 719 **Macbride** (Thomas H.). Geology of Cherokee and Buena Vista counties [Iowa], with notes on the limits of the Wisconsin drift as seen in northwestern Iowa.

Iowa Geol. Surv., vol. 12, Ann. Rept. for 1901, pp. 305-353, figs. 56-59, geol. map, 1902.

Describes the physiographic and drainage features, geologic structure and economic products of the counties.

- 720 **McCallie** (S. W.). Mineral resources of Georgia.

Int. Mg. Cong., 4th session, Proc., pp. 33-42, 1901.

Gives an account of the various economic products of the State.

- 721 — A preliminary report on the roads and road-building materials of Georgia.

Ga. Geol. Surv., Bull. no. 8, 264 pp., 27 pls., 28 text figs., 1901; Stone, vol. 24, pp. 316-322, 352-353, 1902.

- 722 — The Ducktown copper mining district.

Eng. & Mg. Jour., vol. 74, pp. 439-441, 5 figs., 1902.

Contains notes on the geology of this area.

- 723 **Maclaren** (J. M.). Ores which are deposited by underground waters.

Mg. & Sci. Press, vol. 85, p. 281, 1902.

- 724 **McConnell** (R. G.). Note on the so-called basal granite of the Yukon Valley [Alaska].

Am. Geol., vol. 30, pp. 55-62, 1902.

Reviews previous discussion of the age and relations of the granite, and presents the author's observations and conclusions.

- 725 — The Yukon district.

Can. Geol. Surv., Summ. Rept. for 1901, pp. 23-37, 1902.

Describes topography, geology, and occurrences of gold in this area.

- 726 **McGee** (W J). The New Madrid earthquake.

Am. Geol., vol. 30, pp. 200-201, 1902.

Refers to the records of this earthquake described by G. C. Broadhead. See no. 128.

- 727 — Geest.

Am. Geol., vol. 30, pp. 381-384, 1902.

Suggests the restoration of the term "geest" proposed by de Luc for the superficial mantle of rock debris.

- 728 — The Antillean volcanoes.

Pop. Sci. Mo., vol. 61, pp. 272-281, 1902.

Reviews descriptions of the recent volcanic phenomena in this region and discusses the geographic distribution of volcanoes.

- 729 **McInnes** (William). Region southeast of Lac Seul [Canada].

Can. Geol. Surv., Summ. Rept. for 1901, pp. 87-93, 1902.

Describes author's observations in this region.

- 730 **McLouth** (C. D.). Some general remarks on the topography, soils, water resources, flora, etc., of Muskegon County [Michigan].

Mich. Geol. Surv., Ann. Rept. for 1901, pp. 104-107, pl. v, 1902.

Contains brief notes on the subjects mentioned and a statement regarding the recent geological history of the region.

- 731 **Malcolmson** (James W.). The Sierra Mojada, Coahuila, Mexico, and its ore-deposits.

Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 100-139, figs. 1-15, 1902.

Describes geology of the area and character and occurrence of the ore deposits.

- 732 **Manzano** (Jesus P.). The mineral zone of Santa Maria del Rio, San Luis Potosi, Mexico.

Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 478-483, 1902.

Contains observations on the geology and mineral deposits of the region.

- 733 **Marbut** (C. F.). The evolution of the northern part of the lowlands of southeastern Missouri.

Mo. Univ., Studies, vol. 1, no. 3, viii, 63 pp., 5 pls., 2 maps, 1902.

Describes geology and topography of this area and discusses the mode of formation of the physiographic features.

- 734 **Marsters** (V. F.). Topography and geography of Bean Blossom Valley, Monroe County, Indiana.

Ind. Acad. Sci., Proc. for 1901, pp. 222-237, 4 figs., 6 pls., 1902.

Describes topographic features and glacial history of this area.

- 735 **Martin** (George Curtis). The geology of Garrett County [Maryland].

Md. Geol. Surv., Garrett Co., pp. 55-182, pls. v-xiv, fig. 1, 1902.

Reviews previous geologic work, gives a bibliography, describes the character, distribution, taxonomy and history of the geologic formations and occurrence of the anticlines and synclines of the county.

- 736 — The mineral resources of Garrett County [Maryland].

Md. Geol. Surv., Garrett Co., pp. 183-231, pls. xv-xvi, 1902.

Describes the character, occurrence and stratigraphic position of the coal seams, the distribution of fire-clays, clays, limestones, building stones, road materials and other economic products.

- 737 — **Clark** (William Bullock) and. Correlation of the Coal Measures of Maryland.

See Clark (W. B.) and Martin (G. C.), 178.

- 738 **Mathews** (Edward Bennett). The mineral resources of Cecil County [Maryland].

Md. Geol. Surv., Cecil Co., pp. 195-226, pls. xvii-xix, 1902.

- 739 — Recent work in the Piedmont area of northern Maryland.

Abstract: Science, new ser., vol. 15, p. 906, 1902.

- 740 **Matthes** (F. E.). Glacial erosion in the northern Rockies.

Abstract: Science, new ser., vol. 15, p. 507, 1902.

- 741 **Matthew** (George F.). *Acrothyra* and *Hyolithes*—a comparison.

Can. Roy. Soc.; Proc. & Trans., 2d ser., vol. 7, sect. iv, pp. 93-107, text figs., 1901.

Discusses characters, systematic position and relation of these genera and describes several species of *Hyolithes*.

- 742 — *Hyolithes gracilis* and related forms from the Lower Cambrian of the St. John group.

Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 7, sect. iv, pp. 109-111, text figs., 1901.

- 743 — New species of Cambrian fossils from Cape Breton.

New Brunswick Nat. Hist. Soc., Bull., vol. 4, pp. 269-286, pl. v., 1901.

- 744 **Matthew** (George F.). *Acrothyra*, a new genus of Etcheminian brachiopods.
New Brunswick Nat. Hist. Soc., Bull., vol. 4, pp. 303-304, 6 figs., 1901.
- 745 — *Monocraterion* and *Oldhamia*.
Irish Naturalist, vol. 10, pp. 135-136, 1901.
- 746 — Additional notes on the Cambrian of Cape Breton, with descriptions of new species.
New Brunswick Nat. Hist. Soc., Bull., vol. 4, pp. 377-426, pls. xiii-xviii, 1902.
Discusses the Cambrian of this area and describes its fauna.
- 747 — Ostracoda of the basal Cambrian rocks in Cape Breton.
Can. Rec. Sci., vol. 8, pp. 437-466, 2 pls., 1902.
Describes the general characters of ostracods and of a number of new genera and species.
- 748 — Cambrian rocks and fossils of Cape Breton.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 221-230, 1902.
Describes observations in this area and gives a table of geologic formations belonging to the lower portion of the Paleozoic rocks in the maritime provinces of Canada.
- 749 — "Stratigraphy versus paleontology in Nova Scotia."
Science, new ser., vol. 16, pp. 513-514, 1902.
Discusses the comparative age of formations in Nova Scotia and New Brunswick. See White (David), 1118.
- 750 — See Bailey (L. W.), 43.
- 751 **Matthew** (W. D.). Fossil mammals of the Tertiary of north-eastern Colorado.
Am. Mus. Nat. Hist., Mem., vol. 1, pt. 7, pp. 355-447, pls. xxxvii-xxxix, figs. 1-34, 1901.
Describes character and occurrence of Tertiary beds in Colorado and the vertebrate fauna obtained from them.
- 752 — A skull of *Dinocyon* from the Miocene of Texas.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 129-136, figs. 1-4, 1902.
- 753 — On the skull of *Bunælorus*, a musteline from the White River Oligocene.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 137-140, figs. 1-3, 1902.
- 754 — New *Canidæ* from the Miocene of Colorado.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 281-290, figs. 1-4, 1902.
- 755 — A horned rodent from the Colorado Miocene. With a revision of the *Mylagauli*, beavers and hares of the American Tertiary.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 291-310, figs. 1-17, 1902.

- 756 **Matthew** (W. D.). The skull of *Hypisodus*, the smallest of the Artiodactyla, with a revision of the Hypertragulidae.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 311-316, figs. 1-4, 1902.
- 757 — List of the Pleistocene fauna from Hay Springs, Nebraska.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 317-322, 1902.
Also describes *Capromeryx furcifer* n. gen. et sp.
- 758 **Mauck** (A. V.), **Cumings** (E. R.) and. A quantitative study of variation in the fossil Brachiopod *Platystrophia lynx*.
See Cumings (E. R.) and Mauck (A. V.), 231.
- 759 **Mauzy** (Carlotta Joaquina). A comparison of the Oligocene of western Europe and the southern United States.
Am. Paleont., Bull. no. 15, pp. 3-94, pls. xx-xxix, 1902.
Describes character and occurrence of Oligocene strata in France, Belgium, Germany and southern United States, giving faunal lists and sections of strata, and discusses their correlation.
- 760 **Meade** (R. K.). The chemical analysis of Portland cement.
Mg. & Sci. Press., vol. 84, p. 5, 1902.
- 761 **Meissner** (C. A.). Some of the pyrites deposits at Port au Port, Newfoundland.
Eng. & Mg. Jour., vol. 73, pp. 626-627, 2 figs., 1902.
Describes the geology and the occurrence of the ores.
- 762 **Mendenhall** (Walter Curran). A reconnaissance in the Norton Bay region, Alaska, in 1900.
U. S. Geol. Surv., Reconnaissances in the Cape Nome and Norton Bay regions, Alaska, in 1900, pp. 187-218, pls. xviii-xxiii, 1901.
Describes the physiography, the character and occurrence of the igneous and sedimentary rocks and occurrence of placer gold.
- 763 — Reconnaissance from Fort Hamlin to Kotzebue Sound, Alaska, by way of Dall, Kanuti, Allen, and Kowak rivers.
U. S. Geol. Surv., Professional Paper no. 10, 68 pp., 9 pls., 1902.
Contains an account of the geology of the region traversed.
- 764 — Notes on the geology of the Klondike.
Abstract: Science, new ser., vol. 15, p. 389, 1902.
- 765 **Merriam** (C. Hart). Bogoslof, our newest volcano.
Harriman Alaska expedition, vol. 2, pp. 291-336, ill., 1902.
- 766 **Merriam** (John C.). Triassic Ichthyopterygia from California and Nevada.
Univ. Cal., Dept. Geol., Bull., vol. 3, pp. 63-108, pls. v-xviii, 1902.
Notes the stratigraphic position and describes several new species of *Shastasaurus* from California, and redescribes Leidy's species of *Cymbospondylus* from Nevada.
- 767 — Triassic Reptilia from northern California.
Abstract: Science, new ser., vol. 15, pp. 411-412, 1902.

- 768 **Merrill** (Frederick J. H.). New York State Museum; report of the director and State geologist, 1900.
N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r7-r22, 1902.
Summary of work done.
- 769 — Description of the State geologic map of 1901.
N. Y. State Mus., Bull. 56, pp. 3-37, 2 pls. (maps), and a table of formations, 1902.
Sketches the history of the New York Geological Survey, outlines briefly the geologic provinces and formations of New York, and discusses data used in compiling the geologic map.
- 770 — **Darton** (N. H.), **Hollick** (Arthur), **Salisbury** (R. D.), **Dodge** (R. E.), **Willis** (Bailey), and **Pressey** (H. A.). New York City Folio—New York-New Jersey.
U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 83, 1902.
Describes geographic and physiographic features, general geologic relations and history, character and occurrence of pre-Cambrian, Cambrian, Silurian, Juratrias, and Cretaceous strata, Quaternary deposits and water-supply.
- 771 **Merrill** (George P.). A newly found meteorite from Admire, Lyon County, Kansas.
U. S. Nat. Mus., Proc., vol. 24, pp. 907-913, pls. 1-lvi, 1902.
- 772 — What constitutes a clay.
Am. Geol., vol. 30, pp. 318-322, 1902.
Discusses the composition of clay and reviews a paper by Rösler entitled "Beiträge zur kenntniß einiger Kaolinlagerstätten."
- 773 — Rutile mining in Virginia.
Eng. & Mg. Jour., vol. 73, p. 351, 1902; Science, new ser., vol. 15, p. 389, 1902.
Abstract of paper read before the Geological Society of Washington.
- 774 **Mickle** (G. R.). The iron-bearing rocks of the Nastapokan Islands.
Can. Mg. Inst., Jour., vol. 5, pp. 256-264, 12 figs., 1902.
Describes the occurrence and composition of the iron ores.
- 775 **Miers** (Henry A.). A visit to the Yukon gold fields. Letter from Henry A. Miers [to the Hon. Clifford Sifton, Canadian Minister of the Interior]. 32 pp., 1901. (Not seen.)
- 776 **Miller** (Samuel A.). Strophomena and the type of the genus.
The Nat. Sci. Jour., New Bedford, Mass., vol. 1, no. 2, Apr., 1897, pp. 29-35.
- 777 **Miller** (Willet G.). The eastern Ontario gold belt.
Ont. Bureau Mines, Rept. for 1902, pp. 186-207, 3 text figs., map, 1902; Eng. & Mg. Jour., vol. 74, p. 850, 1902.
Describes the distribution and geologic occurrence of the ore bodies.

- 778 **Miller** (Willet G.). Lake Temiscaming to the Height of Land [Canada].

Ont. Bureau Mines, Rept. for 1902, pp. 214-230, 1902.

Contains notes on the geology of this region.

- 779 — Eastern Ontario; a region of varied mining industries.

Can. Mg. Inst., Jour., vol. 5, pp. 233-255, 4 figs., 1902.

Describes the occurrence of mineral deposits.

- 780 **Milne** (J.). The recent volcanic eruptions in the West Indies.

Nature, vol. 66, pp. 56-58, 107-111, 370-373, 3 figs., 1902.

Discusses recent reports regarding these eruptions.

- 781 **Monkton** (G. F.). Mining districts near Kamloops Lake, British Columbia.

Inst. Mg. Engrs. [England], Trans., vol. 18, pp. 293-310, figs. 8-14, 1899.

Contains notes on the geology of this area.

- 782 **Monroe** (Charles E.). Notes on a collection of Hamilton fossils from the town of Bethany, Genesee County, N. Y.

Wis. Nat. Hist. Soc., Bull., vol. 2, pp. 57-67, 1902.

Contains notes on fossils collected and gives faunal lists.

- 783 **Moore** (Charles J.). The formation of the Cripple Creek mining district, Teller County, Colorado.

Int. Mg. Cong., 4th session, Proc., pp. 87-91, 1901.

- 784 — The formation of the Leadville mining district, Lake County, Colorado.

Int. Mg. Cong., 4th session, Proc., pp. 175-179, 1901.

- 785 **Moore** (Frederick). Gold in North Carolina.

Sci. Am. Suppl., vol. 53, p. 21918, 1902.

- 786 **Moore** (Joseph) and **Hole** (Allen D.). Concerning well-defined ripple marks in the Hudson River limestone, Richmond, Indiana.

Ind. Acad. Sci., Proc. for 1901, pp. 216-220, 3 pls., 1902.

- 787 **Mosely** (E. L.). Submerged valleys in Sandusky Bay [Ohio].

Nat. Geog. Mag., vol. 13, pp. 398-403, 4 figs., 1902.

Discusses the character and occurrence of these valleys and the indications that the tilting of the Great Lakes region is still progressing.

- 788 **Moses** (Alfred J.) and **Luquer** (Lea McL.). Notes on recent mineralogical literature.

School of Mines Quart., vol. 33, pp. 290-302, 1902.

- 789 **Muir** (John). Notes on the Pacific coast glaciers.

Harriman Alaska Expedition, vol. 1, pp. 119-135, ill., 1902.

- 790 **Murphy** (Edward Charles). Accuracy of stream measurements.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 64, 99 pp., 30 figs., 4 pls., 1902.

N.

- 791 **Nason** (Frank L.). The disseminated lead ores of southeast Missouri.
Eng. & Mg. Jour., vol. 73, pp. 478-480, 2 figs., 1902.
Describes the occurrence and origin of these ores.
- 792 — The geological relations and the age of the St. Joseph and Potosi limestones of Missouri.
Eng. & Mg. Jour., vol. 73, p. 861, 1902.
Discusses the relations of these beds.
- 793 **Nathorst** (A. G.). Bidrag till nordöstra Grönlands geologi.
Stockholm Geol. Fören., Förh., vol. 23, pp. 275-305, pls. v-ix, 1901.
Describes the geology of northeastern Greenland.
- 794 **Nattress** (Thomas). The Corniferous exposure in Anderdon [Ontario].
Ont. Bureau Mines, Rept. for 1902, pp. 123-127, 1902.
Gives notes on the distribution of the Corniferous, describes the geology at this locality and gives a faunal list.
- 795 **Newell** (F. H.). Operations at river stations, 1901. A report of the division of hydrography of the United States Geological Survey. Part I—(East of the Mississippi River).
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 65, 334 pp., 1902.
- 796 — Operations at river stations, 1901. A report of the division of hydrography of the United States Geological Survey. Part II—(West of the Mississippi River).
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 66, 188 pp., 1902.
- 797 **Newsom** (John F.). Drainage of southern Indiana.
Jour. Geol., vol. 10, pp. 166-181, pl. vi, 1902.
Describes the drainage features of this region that are dependent upon the geologic structure.
- 798 — A natural gas explosion near Waldron, Indiana.
Jour. Geol., vol. 10, pp. 803-814, figs. 1-5, 1902.
Describes the fissures and fractures caused by the explosion.
- 799 **Newton** (R. Bullen). List of Thomas Say's types of Maryland (U. S.) Tertiary mollusca in the British Museum.
Geol. Mag., dec. iv, vol. 9, pp. 303-305, 1902.
- 800 **Nicholls** (H. A. Alford). Notes on the recent eruptions of Mt. Pelée [West Indies].
Nature, vol. 66, pp. 638-639, 1902.
Contains daily notes of the recent eruptions.

- 801 **Nichols** (Henry W.). [In discussion of paper by Eric Hedburg on "The Missouri and Arkansas zinc-mines."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 1015-1021, 1902.
- 802 **Nichols** (J. Clayton). Notes on the Pigholugan and Pigtao gold region, Island of Mindanao, Philippine Islands.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 611-616, 1902.
Describes the occurrence of gold veins and placers.
- 803 **Nickles** (John M.). Geological section—St. Louis to Shawneetown [Illinois].
Ill. Bd. World's Fair Commissioners, Rept., pp. 155-176, 1 pl. (sections), 1895.
Describes geology along the line of the section and gives records of borings and sections of outcrops.
- 804 — Geological section in southern Illinois through Waterloo, Sparta, Murphysboro and Olmstead.
Ill. Bd. World's Fair Commissioners, Rept., pp. 177-223, 1895.
Describes the geology along the line of the section, gives records of borings and sections of outcrops, and discusses the occurrence and exploitation of natural gas at Sparta, Illinois.
- 805 — The geology of Cincinnati.
Cin. Soc. Nat. Hist., Jour., vol. 20, pp. 49-100, 1 pl. (topographic map), 1902.
Describes topography and geology of Cincinnati and the surrounding region, and gives faunal lists.
- 806 — Description of a new bryozoan "*Homotrypa bassleri*," n. sp., from the Warren beds of the Lorraine group.
Cin. Soc. Nat. Hist., Jour., vol. 20, pp. 103-105, text figs., 1902.
- 807 **Nicolau** (Th.). Untersuchungen an den eisenführenden gesteinen der insel Disko.
Meddelelser om Groenland, vol. 24, pp. 215-248, 1901.
Describes the occurrence, characters and composition of the iron-bearing rocks of the Island Disco.
- 808 **Nicolson** (John T.), **Adams** (Frank D.) and. An experimental investigation into the flow of marble.
See Adams (F. D.) and Nicolson (J. T.), 6.
- 809 **Nutter** (Edward Hoit) and **Barber** (William B.). On some glaucophane and associated schists in the Coast Ranges of California.
Jour. Geol., vol. 10, pp. 738-744, 1902.
Describes the occurrence and contact relations of the schists and discusses their origin.

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- 810 **Ochsenius** (Carl). *Natürlicher koks in den Santa Clara-Kohlenfeldern, Sonora, Mexiko.*

Zeitsch. für prak. Geol., Jahrg. 1900, p. 21, 1900.

Describes an occurrence of natural coke.

- 811 — *Natronsalpeter in California.*

Zeitsch. für prak. Geol., Jahrg. 1902, heft. 10, pp. 337-339, 1902.

Gives a general account of deposits of nitrate of soda.

- 812 **Ogilvie** (I. H.). *Glacial phenomena in the Adirondacks and Champlain Valley.*

Jour. Geol., vol. 10, pp. 397-412, 1 pl., 1902; Columbia Univ., Geol. Dept., Contrib., vol. 10, no. 84, 1902.

Describes the striae, character of ice movement and glacial deposits of the region, and discusses the erosion history of the Adirondacks. Includes table of striae.

- 813 — *An analcite-bearing camptonite from New Mexico.*

Jour. Geol., vol. 10, pp. 500-507, figs. 1-4, 1902; Columbia Univ., Geol. Dept., Contrib., vol. 10, no. 85, 1902.

Describes the general geology of the region and the occurrence and character of the camptonite and compares with rocks of similar composition from other regions.

- 814 **O'Harra** (Cleophas C.). *Black Hills ore deposits.*

Int. Mg. Cong., 4th session, pp. 97-100, 1901.

Describes the occurrence of the gold ores.

- 815 — *The mineral wealth of the Black Hills [South Dakota].*

S. Dak. Geol. Surv., Bull. no. 3, 136 pp., 31 pls., 1902; S. Dak. School of Mines, Bull. no. 6, Dept. of Geol., pp. 1-88, 22 pls., 1902.

Gives a general geological sketch of the geology of the Black Hills and describes the occurrence of the minerals.

- 816 **Ohly** (J.). *The origin of petroleum. Different theories which have been advanced and the circumstances for and against them.*

Mines & Minerals, vol. 22, pp. 532-533, 1902.

- 817 **Ordoñez** (Ezequiel). *The onyx-marble deposits of Jimulco, Coahuila [Mexico].*

Soc. Cient. Ant. Alz., Mem., vol. 15, pp. 381-385, 1901.

- 818 — *Les cendres d'un volcan près du Santa Maria (Guatemala).*

Soc. Cient. Ant. Alz., Mem. y Rev., vol. 18, pp. 33-36, 1902.

Describes materials ejected from a volcano near Santa Maria.

- 819 — *The mining district of Pachuca, Mexico.*

Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 224-241, 1902.

Includes an account of the topography and geology of the area and the ore formations.

- 820 **Ordoñez** (Ezequiel) and **Böse** (E.). Apuntes para la geología del valle de Chilpancingo [Mexico].
Soc. Cient. Ant. Alz., Mem., vol. 14, pp. 5-12, 2 figs., 1899.
Contains observations on the geology of this area.
- 821 **Ortmann** (A. E.). The geographical distribution of freshwater decapods and its bearing upon ancient geography.
Am. Phil. Soc., Proc., vol. 41, pp. 267-400, figs. 1-8, 1902.
Includes a discussion of the geography of the earth's surface during Cretaceous, Tertiary and Quaternary times.
- 822 **Osann** (A.). Notes on certain Archæan rocks of the Ottawa Valley [Canada].
Can. Geol. Surv., Ann. Rept., new ser., vol. 12, pp. 10-840, 12 figs., 11 pls., 1902.
Discusses petrology of this region and occurrence and characters of economic minerals.
- 823 **Osborn** (Henry Fairfield). Homoplasy as a law of latent or potential homology.
Am. Nat., vol. 36, pp. 259-271, figs. 1-6, 1902.
Discusses the independent evolution of identical structures in teeth of different families of mammals as a form of homology which has heretofore been defined as homoplasy.
- 824 — The law of adaptive radiation.
Am. Nat., vol. 36, pp. 353-363, figs. 1-3, 1902.
Quotes from the author's previous papers bearing upon this law and shows how it is exhibited in the geographic distribution of orders and families and in related contemporaneous forms.
- 825 — Dolichocephaly and brachycephaly in the lower mammals.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 77-89, figs. 1-5, 1902.
Discusses these factors in cranial evolution and their correlation with similar ones in the trunk and limbs.
- 826 — The four phyla of Oligocene Titanotheres. Titanotheres contributions, no. 4.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 91-109, figs. 1-13, 1902.
Discusses the general characters of the material and their stratigraphic position.
- 827 — American Eocene Primates and the supposed rodent family Mixodectidae.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 169-214, figs. 1-40, 1902.
Points out the synonymous genera and describes the species including several new ones.
- 828 — Distinctive characters of the Mid-Cretaceous fauna.
Can. Geol. Surv., Contr. to Can. Paleont., vol. 3, pt. 2, pp. 5-21, 1902.
Discusses relative age and correlation of Cretaceous formations and the relations of their faunas and gives in tabular form the geologic distribution of Cretaceous vertebrates.

- 829 **Osborn** (Henry Fairfield). Recent zoopaleontology—new vertebrates of the Mid-Cretaceous.

Science, new ser., vol. 16, pp. 673-676, 1902.

Gives an abstract of a report by Henry F. Osborn and Lawrence M. Lambe on "Vertebrata from the Mid-Cretaceous rocks of the Northwest Territory of Canada."

- 830 — Recent zoopaleontology: a remarkable new mammal from Japan, its relationship to the Californian genus *Desmostylus*, Marsh—progress of the exploration for fossil horses—the perissodactyles typically polyphyletic.

Science, new ser., vol. 16, pp. 713-715, 1902.

- 831 — Recent zoopaleontology: Triassic Ichthyosaurs from California and Nevada—abandonment of the Oligocene and Miocene lake basin theory—studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Science, new ser., vol. 16, pp. 749-752, 1902.

- 832 **Owen** (Luella Agnes). The bluffs of the Missouri River.

Intern. Geogr.-Kongr., Siebenten, Verh., pt. 2, pp. 686-690, 1901.

Describes loess deposits and discusses evidence as to their origin.

P.

- 833 **Palache** (Charles). A description of epidote crystals from Alaska.

Am. Acad. Arts & Sci., Proc., vol. 37, pp. 531-535, pl., 1902; Zeitsch. für Kryst. u. Min., vol. 36, pp. 433-437, pl. xiii, 1902.

- 834 — and **Fraprie** (F. R.). 1. Babingtonite from Somerville, Massachusetts. 2. Babingtonite from Athol, Massachusetts.

Am. Acad. Arts & Sci., Proc., vol. 38, pp. 383-393, 2 pls., 1902.

Describes occurrence, crystallography and chemical analysis.

- 835 — **Lawson** (Andrew C.) and. The Berkeley Hills [California]. A detail of Coast Range geology.

See Lawson (A. C.) and Palache (C.), 666.

- 836 — **Wolff** (John E.) and. Apatite from Minot, Maine.

See Wolff (J. E.) and Palache (C.), 1176.

- 837 **Parks** (W. A.). The Huronian of the Moose River Basin [Ontario].

Toronto Univ., Studies, Geol. Series, no. 1, 35 pp., 1 map, 1900.

Discusses the occurrence, character and classification of the Huronian rocks of the region.

- 838 — The country east of Nipigon Lake and River [Canada].

Can. Geol. Surv., Summ. Rept. for 1901, pp. 103-107, 1902.

Describes the author's observations in this area.

- 839 **Parsons** (Arthur L.). Recent developments in the gypsum industry in New York State.

N. Y. State Mus., 54th Ann. Rept., vol. 1, pp. r177-r183, 1902.

- 840 **Patton** (Horace Bushnell), **Diller** (Joseph Silas) and. The geology and petrography of Crater Lake National Park.
See Diller (J. S.) and Patton (H. B.), 285.
- 841 **Pearson** (Herbert W.). A nebulo-meteoric hypothesis of creation.
Revised and edited by William F. Phelps.
Duluth, Minn., J. J. LeTourneau & Co., 38 pp., 2 figs., 1902.
- 842 **Penfield** (S. L.), **Hillebrand** (W. F.) and. Some additions to the alunite jarosite group of minerals.
See Hillebrand (W. F.) and Penfield (S. L.), 509.
- 843 — **Wells** (H. L.) and. On a new occurrence of sperrylite.
See Wells (H. L.) and Penfield (S. L.), 1112.
- 844 **Perkins** (George H.). Report on the marble, slate and granite industries of Vermont.
Vt. Geol. Surv., Rept. State Geol., 68 pp., 23 figs., 1898.
Describes occurrence and geologic position of the marbles, slates and granites of Vermont.
- 845 — Report of State geologist on the mineral resources of Vermont, 1899–1900.
Burlington, Vermont, 83 pp., 29 figs., 1900.
Describes the occurrence of copper, slate and building and ornamental stones.
- 846 — Sketch of the life of Zadock Thompson.
Am. Geol., vol. 29, pp. 65–70, por., 1902; Rept. Vt. State Geol., pp. 7–13, por., 1902.
- 847 — and others. Report of the State geologist on the mineral industries and geology of certain areas of Vermont, III.
191 pp., 64 pls., 1902.
- 848 — List of reports on the geology of Vermont, 1845–1900 [and] List of publications on the geology of Vermont.
Vt. Geol. Surv., Rept. State Geol., III, pp. 14–21, 1902.
- 849 — Report on mineral industries [Vermont].
Vt. Geol. Surv., Rept. State Geol., III, pp. 31–45, pls. i–iii, 1902.
Discusses the occurrence of minerals and building and ornamental stones.
- 850 — The geology of Grand Isle [Vermont].
Vt. Geol. Surv., Rept. State Geol., III, pp. 102–173, pls. xxv–lxvii, 2 figs., 1902.
Describes the geographic and geologic occurrence and history of the formations of this island.
- 851 **Peterson** (O. A.) and **Gilmore** (C. W.). *Elosaurus parvus*; a new genus and species of the sauropoda.
Carnegie Mus., Annals, vol. 1, no. 3, pp. 490–499, 10 figs., pl. xxv, 1902.

- 852 **Phillips** (William Battle). Report of progress for 1901. Sulphur, oil, and quicksilver in trans-Pecos, Texas.
Texas Univ. Mineral Surv., Bull. no. 2, 43 pp., 12 pls., map, 1902.
Contains general geologic notes on certain state lands, a description of the sulphur deposits of El Paso County, and of the quicksilver deposits of Brewster County, and includes reports by E. M. Skeates.
- 853 — Coal, lignite, and asphalt rocks [Texas].
Texas Univ. Mineral Surv., Bull. no. 3, 137 pp., 26 figs., 11 pls., 1902.
Describes the character and occurrence of the coals, lignites and asphalts and associated rocks at various localities in the state. Portions of the report were prepared by R. C. Brooks, B. F. Hill and H. W. Harper.
- 854 **Pirsson** (Louis V.), **Cross** (Whitman), **Iddings** (Joseph P.), and **Washington** (Henry S.). A quantitative chemico-mineralogical classification and nomenclature of igneous rocks.
See Cross (W.), Iddings (J. P.), Pirsson (L. V.), and Washington (H. S.), 228.
- 855 **Poole** (Henry S.). Stigmara structure.
Nova Scotian Inst. Sci., Trans., vol. 10, pp. 345-347, pls. iii-iv, 1902.
- 856 — The coal-fields of New Brunswick, Canada.
Inst. Mg. Engrs. [England], Trans., vol. 23, pp. 40-47, 1902.
Discusses the geologic occurrence of coal in this area.
- 857 — The coal problem in New Brunswick.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 204-206, 1902.
Discusses possibilities of coal production in the province.
- 858 **Porter** (Fred B.). Analyses of the Mississippian (Subcarboniferous) limestone from the Atchison [Kansas] prospect well.
Kans. Acad. Sci., Trans., vol. 17, p. 52, 1901.
- 859 **Porter** (T. C.). Volcanic dust from the West Indies.
Nature, vol. 66, pp. 131-132, 2 figs., 1902.
Describes the characters of volcanic dust derived from recent eruptions.
- 860 **Prather** (John K.). On the fossils of the Texas Cretaceous, especially those collected at Austin and Waco.
Tex. Acad. Sci., Trans., vol. 4, pp. 85-87, 1901.
Discusses the occurrence of fossils and gives faunal lists.
- 861 — A preliminary report on the Austin chalk underlying Waco, Texas, and the adjoining territory.
Texas Acad. Sci., Trans., vol. 4, pt. 2, no. 8, pp. 1-8, [115-122], 1 pl., 1902.
Describes the lithology and stratigraphy of this formation and the underlying marl.

862 **Pratt** (Joseph Hyde). Gold deposits of Arizona.

Eng. & Mg. Jour., vol. 73, pp. 795-796, 2 figs., 1902.

Presents a map showing the location of the various gold deposits and describes the occurrence of gold ores in certain districts.

863 — Gold mining in the southern Appalachians.

Eng. & Mg. Jour., vol. 74, pp. 241-242, 1902.

864 — Marble and talc of North Carolina.

Stone, vol. 24, pp. 145-149, 1902.

Describes the occurrence of the talc and accompanying marble.

865 — The mining industry in North Carolina during 1901.

N. C. Geol. Surv., Economic Paper, no. 6, 102 pp., 1902.

Contains notes on the occurrence of economic products and minerals.

866 **Pressey** (Henry Albert). Hydrography of the southern Appalachian Mountain region. Part I.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 62, pp. 1-95, pls. i-xxv, 1902.

Describes briefly the topography and geology of the region.

867 — Hydrography of the southern Appalachian region, Part II.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 63, pp. 105-190, pls. xxvi-xliv, 1902.

868 — Water powers of the State of Maine.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 69, 124 pp., 14 pls., 12 figs., 1902.

869 — and others. New York City Folio—New York—New Jersey.

See Merrill (F. J. H.) and others, 770.

870 **Prest** (W. H.). On drift ice as an eroding and transporting agent.

N. S. Inst. Sci., Trans., vol. 10, pp. 333-344, 1902.

871 **Preston** (H. L.). Niagara meteorite.

Jour. Geol., vol. 10, pp. 518-519, 1902.

Describes a meteorite from North Dakota.

872 — The Franceville [El Paso County, Colorado] meteorite.

Jour. Geol., vol. 10, pp. 852-857, figs. 1-3, 1902.

Describes the dimensions and physical characters of the meteorite.

873 — Franceville meteorite.

Rochester Acad. Sci., Proc., vol. 4, pp. 75-78, pl. vi, 1902.

Describes characters and occurrence of this meteorite found in El Paso County, Colo., and notes other falls in the State.

874 **Privat-Deschanel** (Paul). L'Etat de Californie.

Lyon Soc. Géog., Bull., vol. 17, pp. 843-860, 1902.

Discusses the general geologic structure and topography of California.

- 875 **Prosser** (Charles S.). Notes on the stratigraphy of the Mohawk Valley and Saratoga County [New York].
N. Y. State Mus., Bull. no. 34 (also in 54th Ann. Rept., vol. 1) pp. 469-482, pls. v-x, 1902.

- 876 — The Sunbury shale of Ohio.
Jour. Geol., vol. 10, pp. 262-312, figs. 1-6, 1902; Ohio State Univ. Bull., ser. 6, no. 13 (Geol. ser., no. 3), 1902.
Describes the character and occurrence of this formation and gives a historical review of the literature of the subject.

- 877 — Revised classification of the Upper Paleozoic formations of Kansas.
Jour. Geol., vol. 10, pp. 703-737, 1902.
Describes the lithologic characters of the formations and their stratigraphic relations.

- 878 — The specimen of Nematophyton in the New York State Museum.
Am. Geol., vol. 29, pp. 372-377, 1902.
Contains notes on the occurrence and character of the material from the Devonian of New York.

- 879 — Richard Burton Rowe.
Am. Geol., vol. 30, pp. 128-129, 1902.
Gives a sketch of his life.

Q.

- 880 **Queneau** (Augustin L.). The gold sands of Cape Nome [Alaska].
Eng. Mag., vol. 23, pp. 497-510, 13 figs., 1902.
Describes physiographic features of the region and the occurrence of the beach and creek sands.

- 881 — Size of grain in igneous rocks in relation to the distance from the cooling wall.
School of Mines Quart., vol. 33, pp. 181-195, 6 pls., 4 figs., 1902; Columbia Univ., Geol. Dept., Contr., vol. 9, no. 80, 1902.
Discusses the mathematical treatment of the diffusion of heat and applies the theory to certain dike rocks.

R.

- 882 **Rabot** (Charles). Géologie du Grönland nord-oriental.
Géographie, vol. 4, pt. 2, pp. 66-68, figs. 16-18, 1901.
Gives a brief account of the geology of Greenland.
- 883 **Rangel** (M. F.). Criadero de fierro del Cerro de Mercado, Durango [Mexico].
Mexico Inst. Geol., Bull. no. 16, pp. 3-74, pls. i, iA, 1902.
Discusses the occurrence of iron ore and associated rocks.

- 884 **Ransome** (Frederick Leslie). The ore deposits of the Rico Mountains, Colorado.

U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 229-397, pls. xxvi-xli, figs. 39-71, 1901.

Describes general geologic structure and relations of the region, the character and occurrence of ore-bearing veins and fissures, character, occurrence and origin of the ore bodies and associated minerals, and the mining operations.

- 885 — Recent progress in petrology.

Science, new ser., vol. 15, pp. 673-674, 1902.

- 886 — Faulting and mountain structure in Arizona.

Abstract: Science, new ser., vol. 15, p. 711, 1902.

- 887 **Raymond** (Percy E.). The Crown Point section [New York].

Am. Pal., Bull. no. 14, pp. 3-44, pls. xviii, xix, map, 1902.

Gives an historical sketch of previous work, describes sections of Ordovician strata, giving faunal lists, and several new species of fossils from this locality.

- 888 **Raymond** (R. W.). [In discussion of paper by J. D. Irving on "Wolframite in the Black Hills of South Dakota."]

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 1025-1026, 1902.

- 889 **Reid** (George D.). The Burro Mountain copper district, New Mexico.

Eng. & Mg. Jour., vol. 74, pp. 778-779, 4 figs., 1902.

- 890 **Reid** (Harry Fielding). The variations of glaciers.

Jour. Geol., vol. 10, pp. 313-317, 1902.

Gives a summary of the 6th annual report of the International Committee on glaciers.

- 891 — A reconnaissance of Mt. Hood and Mt. Adams.

Abstract: Science, new ser., vol. 15, p. 906, 1902.

- 892 **Reid** (John A.). The igneous rocks near Pajaro [California].

Univ. Cal., Dept. Geol., Bull., vol. 3, pp. 173-190, pl. xviii, 1902.

Describes geologic occurrence and petrographic characters of the granite rocks of the Coast Ranges of California.

- 893 **Reitinger** (J.), **Kraus** (E. H.) and. Hüssakite, a new mineral, and its relations to xenotime.

See Kraus (E. H.) and Reitinger (J.), 605.

- 894 **Renault** (B.). Sur quelques microorganismes des combustibles fossiles.

Soc. de l'Ind. Min., Bull., 3d ser., vol. 13, livraison 4, pp. 865-1129, figs. 1-34, atlas, pls. i-ix, 1899; vol. 14, livraison 1, pp. 5-160, atlas, pls. x-xxv, 1900.

Contains descriptions of fossils from the Coal Measures of the Appalachian region.

- 895 **Richardson** (C. H.). Analysis of Washington [Vermont] marble, with notes upon the distribution and age.
Vt. Geol. Surv., Rept. State Geol., pp. 39-40, 1898.
- 896 — The terranes of Orange County, Vermont.
Vt. Geol. Surv., Rept. State Geol., III, pp. 61-101, pls. ix-xxiii, 1902.
Discusses the topographic and geologic features, the occurrence and characters of economic products, and the petrographic and chemical characters of the rocks.
- 897 **Richardson** (Clifford) and **Wallace** (E. C.). Petroleum from the Beaumont, Texas, field.
Soc. Chem. Industry, Jour., vol. 20, pp. 690-693, 1901.
Discusses the occurrence, composition and refining of the oil of the Beaumont field.
- 898 **Richardson** (George Burr). The misnamed Indiana anticline.
Jour. Geol., vol. 10, pp. 700-702, 1 fig., 1902.
Describes certain structural phenomena in Pennsylvania.
- 899 — See Brooks (A. H.); 132.
- 900 **Richardson** (G. M.). Edward Waller Claypole as a teacher.
Am. Geol., vol. 29, pp. 24-30, 1902.
- 901 **Rickard** (T. A.). The formation of bonanzas in the upper portions of gold-veins.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 198-220, 1902.
Discusses enrichment by concentration through the action of underground water by solution and precipitation, and the distribution of ore-bonanzas in Australia, Colorado, California and New Zealand.
- 902 — Recent progress in the study of ore deposits.
Eng. & Mg. Jour., vol. 73, pp. 106-107, 1902.
- 903 — The Geological Survey and the western miner.
Eng. & Mg. Jour., vol. 74, p. 5, 1902.
- 904 — An example of the localization of rich ore.
Eng. & Mg. Jour., vol. 74, pp. 847-850, 6 figs., 1902.
- 905 **Rickert** (Julius). Coal in Alberta, Canada.
Eng. & Mg. Jour., vol. 73, pp. 766-767, 1902.
Contains brief notes on the coals of Crow's Nest coal field.
- 906 **Ries** (Heinrich). Clays and shales of Michigan, their properties and uses.
Mich. Geol. Surv., vol. 8, pt. 1, 66 pp., 4 pls., 6 figs., 1900.
Contains notes on the geologic occurrence and chemical composition of clays in Michigan.

- 907 **Ries** (Heinrich). Clays of New York, their properties and uses.
N. Y. State Mus., 54th Ann. Rept., vol. 2, pp. 493-944, pls. 1-140, map in pocket, 1902.
See no. 4638a in U. S. Geol. Surv., Bull. no. 188.
- 908 — Lime and cement industries of New York.
N. Y. State Mus., Bull., no. 44, pp. 639-848, pls. i-lxxxv, map in pocket, 1901; N. Y. State Mus., 54th Ann. Rept., vol. 3, 1902.
Discusses origin, chemical composition and geologic occurrence in New York of lime and cement materials.
- 908 — Report on the clays of Maryland.
Md. Geol. Surv., vol. 4, pp. 205-505, pls. xix-lxix, figs. 5-34, 1902.
Discusses origin, composition, properties, geologic and geographic distribution, and working of the clays of Maryland.
- 910 **Roberts** (Milnor), **Landes** (Henry), **Thyng** (William S.), **Lyon** (D. A.), and. The metalliferous resources of Washington, except iron.
See Landes (H.), Thyng (W. S.), Lyon (D. A.), and Roberts (M.), 645.
- 911 **Rockwell** (Cleveland). The Coos Bay coal fields [Oregon].
Eng. & Mg. Jour., vol. 73, pp. 238-240, 270-271, 1902.
Contains notes on the geologic structure of this area.
- 912 **Rogers** (Austin F.). Some new American species of *Cyclus* from the Coal Measures.
Kans. Univ., Sci. Bull., vol. 1, pp. 269-275, pl. xiv, 1902; Columbia Univ., Contr. from Geol. Dept., vol. 10, no. 88.
- 913 — Mineralogical notes, no. 3.
School of Mines Quart., vol. 33, pp. 133-139, figs. 1-4, 1902.
Presents crystallographic notes on gypsum, celestite, barite, anglesite, cerussite, vesuvianite, calcite, dolomite, pyrite and quartz crystals.
- 914 — The crystallography of the calcites of the New Jersey trap region.
School of Mines Quart., vol. 23, pp. 336-347, 1902.
- 915 **Rowley** (R. R.). New species of fossils from the Subcarboniferous rocks of northeastern Missouri.
Am. Geol., vol. 29, pp. 303-310, 1902.
- 916 — See Greene (G. K.), 428, 429.
- 917 **Ruddy** (C. A.). The water resources of Washington. Artesian water.
Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 296-307, 1902.
Bull. 221-03—7

- 918 **Ruedemann** (Rudolph). The graptolite (Levis) facies of the Beekmantown formation in Rensselaer County, New York. N. Y. State Mus., Bull. no. 52, pp. 546-575, pl. ii, 1902.
Describes the lithologic and faunal characters of the beds, and discusses their relations and correlation with Canadian and European strata of the same age.
- 919 — Growth and development of *Goniograptus thureau* McCoy. N. Y. State Mus., Bull. no. 52, pp. 576-592, figs. 1-19, 1902.
Discusses the ontogeny of the species.
- 920 — **Clarke** (J. M.) and **Luther** (D. D.). Contact lines of Upper Siluric formations on the Brockport and Medina quadrangles [New York].
See Clarke (J. M.), Ruedemann (R.), and Luther (D. D.), 192.
- 921 **Russell** (Israel C.). [Report to the National Geographic Society on the recent volcanic eruptions in the West Indies].
Nat. Geog. Mag., vol. 13, pp. 267-285, 8 figs., 1902.
Describes the author's observations in Martinique and St. Vincent.
- 922 — Volcanic eruptions on Martinique and St. Vincent.
Nat. Geog. Mag., vol. 13, pp. 415-436, 10 figs., 1902.
Contains additional data on the eruptions and a bibliography.
- 923 — Geology and water resources of the Snake River Plains of Idaho.
U. S. Geol. Surv., Bull. no. 199, 192 pp., 25 pls., 6 figs., 1902.
Describes topography, geology and resources of this area.
- 924 — The Portland cement industry in Michigan.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 629-685, pls. xlv-xlvi, 1902.
Describes composition of Portland cement, method of manufacture, the geologic occurrence, properties and composition of limestones, shales, marls and clays occurring in Michigan suitable for the manufacture of Portland cement and the development of the industry.
- 925 — Geology of the Snake River Plains, Idaho.
Abstract: Science, new ser., vol. 15, pp. 85-86, 1902.

S.

- 926 **Safford** (J. M.) and **Killebrew** (J. B.). The elements of the geology of Tennessee. Nashville, Tenn. 264 pp., 45 figs., 1900.
- 927 **Salazar** (Leopoldo). Apuntes relativos al mineral de Taxco de Alarcon (Estado de guerrero) [Mexico].
Soc. Cient. Ant. Alz., Mem., vol. 16, pp. 167-177, pl. vii, 1901.

- 928 **Salisbury** (Rollin D.). [In discussion of paper by T. C. Chamberlin on "The geologic relations of the human relics of Lansing, Kansas."] Jour. Geol., vol. 10, pp. 778-779, 1902.
- 929 — Recent progress in glaciology. Science, new ser., vol. 15, pp. 353-355, 1902.
- 930 — assisted by **Kümmel** (Henry B.), **Peet** (Charles E.) and **Knapp** (George N.). The glacial geology of New Jersey. N. J. Geol. Surv., Final Rept., vol. 5, xxv+ 802 pp., 66 pls., 102 figs. in text, 4 maps (in pocket), 1902.
Discusses character, distribution and origin of the drift, the development of the ice sheet, the topographic and drainage changes produced by it, the history and cause of the Glacial period, and describes in detail the drift features of northern New Jersey.
- 931 — and others. New York City Folio—New York—New Jersey. See Merrill (F. J. H.) and others, 770.
- 932 **Sardeson** (Frederick W.). The Saint Peter sandstone. Minn. Acad. Nat. Sci., Bull., vol. 4, no. 1, pp. 64-88, pls. ii-iv, 1896.
Discusses geographic and geologic distribution and lithologic characters and describes the fauna.
- 933 — The fauna of the Magnesian series. Minn. Acad. Nat. Sci., Bull., vol. 4, no. 1, pp. 92-105, pls. v-vi, 1896.
- 934 — On the deceptive fossilization of certain pelecypod species and on the genus *Eurymya*. Am. Geol., vol. 30, pp. 39-45, figs. 1-9, 1902.
Describes the preservation of *Modiolopsis plana* Hall.
- 935 — The Carboniferous formations of Humboldt, Iowa. Am. Geol., vol. 30, pp. 300-312, pl. xvii, 1902.
Describes the occurrence of the Kinderhook at this locality and the characters of the fossils collected.
- 936 **Savage** (T. E.). Drift exposure in Tama County [Iowa]. Iowa Acad. Sci., Proc., vol. viii, pp. 275-278, fig. 16, 1901.
Describes the strata exposed in a railroad cutting and refers them to the Kansas drift, Aftonian inter-Glacial period, and pre-Kansan drift.
- 937 — Geology of Henry County [Iowa]. Iowa Geol. Surv., vol. 12, Ann. Rept. for 1901, pp. 239-302, figs. 44-55, geol. map, 1902.
Describes the physiographic and drainage features, geologic structure and economic products of this county.
- 938 **Savicki** (Wm. V.). Geological Survey of Michigan. Report of field work for 1900. Mich. Miner., vol. 3, no. 3, pp. 9-11, 1 fig., 1901.

- 939 **Schlichter** (Charles S.). The motions of underground waters.
U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 67, 106 pp.,
50 figs., 8 pls., 1902.
- 940 **Schneider** (P. F.). New exposures of eruptive dikes in Syracuse,
New York.
Am. Jour. Sci., 4th ser., vol. 14, pp. 24-26, 1902.
Describes the occurrence and character of the dike rock.
- 941 **Schrader** (Frank Charles) and **Spencer** (Arthur Coe). The geol-
ogy and mineral resources of a portion of the Copper River
district, Alaska.
U. S. Geol. Surv. (Special reports on Alaska.) 94 pp., 13 pls., 1901.
Describes the general geography and physiography, the occurrence
and character of the sedimentary and igneous rocks, and the occurrence
of copper and gold.
- 942 — Geological section of the Rocky Mountains in northern
Alaska.
Geol. Soc. Am., Bull., vol. 13, pp. 233-252, pls. xl-xliii, 1902.
Describes the character and occurrence of the Silurian, Devonian,
Carboniferous and Mesozoic rocks.
- 943 — The geological section of the Rocky Mountains in northern
Alaska.
Abstract: Science, new ser., vol. 15, pp. 665-666, 1902.
- 944 **Schuchert** (Charles), **Ulrich** (E. O.) and. Paleozoic seas and bar-
riers in eastern North America.
See Ulrich (E. O.) and Schuchert (C.), 1045.
- 945 — See Brooks (A. H.), 134.
- 946 **Scott** (A. C.). A brief summary of glacier work.
Am. Geol., vol. 30, pp. 215-261, 1902.
Gives a general summary of the literature of glaciology.
- 947 **Scott** (O. N.). The ore deposits of Copper Mountain, Similkam-
een district, British Columbia.
Can. Mg. Inst., Jour., vol. 5, pp. 493-502, 2 figs., 1902; Can. Mg. Rev.,
vol. 21, pp. 173-176, 2 figs., 1902.
Describes the rocks of this area, the occurrence of the ore bodies and
their origin.
- 948 **Scudder** (Samuel H.). Canadian fossil insects. 4. Additions to
the coleopterous fauna of the interglacial clays of the
Toronto district.
Can. Geol. Surv., Contr. to Can. Paleont., vol. 2, pt. 2, pp. 67-90, pls.
vi-xiii, 1900.

- 949 **Seeley** (Henry M.). Sketch of the life and work of Augustus Wing.

Vt. Geol. Surv., Rept. State Geol., III, pp. 22-30, por., 1902. [See also U. S. Geol. Surv., Bull. 203, no. 686.]

Describes the life of Augustus Wing and his work on the geology of Vermont.

- 950 — Some sponges of the Chazy formation.

Vt. Geol. Surv., Rept. State Geol., III, pp. 151-161, pls. lvi-lviii, 1902.

Discusses geologic position and gives descriptions of these forms.

- 951 **Sellards** (E. H.). On the fertile fronds of *Crossothea* and *Myriotheca*, and on the spores of other Carboniferous ferns from Mazon Creek, Illinois.

Am. Jour. Sci., 4th ser., vol. 14, pp. 195-202, 1902.

- 952 — On the validity of *Idiophyllum rotundifolium* Lesquereux, a fossil plant from the Coal Measures of Mazon Creek, Illinois.

Am. Jour. Sci., 4th ser., vol. 14, pp. 203-204, figs. 1-2, 1902.

Considers that the characters of this fossil plant agree with *Neuropteris rarinervis* Bunb. and that the genus *Idiophyllum* has no standing.

- 953 **Shattuck** (George Burbank). Development of knowledge concerning the physical features of Cecil County [Maryland], with bibliography.

Md. Geol. Surv., Cecil Co., pp. 31-62, pls. i-iii, figs. 1-3, 1902.

- 954 — The physiography of Cecil County [Maryland].

Md. Geol. Surv., Cecil Co., pp. 63-82, pls. iv-vii, fig. 4, 1902.

Discusses topographic features and their origin.

- 955 — The geology of the coastal plain formations [of Cecil County, Maryland].

Md. Geol. Surv., Cecil Co., pp. 149-194, pls. xii-xvi, figs. 8-11, 1902.

Describes the character, distribution and history of geologic formations in this county of Quaternary, Tertiary and Mesozoic age.

- 956 — The Miocene formation of Maryland.

Abstract: Science, new ser., vol. 15, p. 906, 1902.

- 957 — The Pleistocene problem in Maryland.

Abstract: Science, new ser., vol. 15, pp. 906-907, 1902.

- 958 **Shedd** (S.). The iron ores of Washington.

Wash. Geol. Surv., vol. 1, Ann. Rept. for 1901, pp. 217-256, pls. xviii-xxi, 1902.

Discusses the distribution, genesis and working of the iron ores of the State of Washington and gives chemical analyses.

- 959 **Sherzer** (Will H.). Ice work in southeastern Michigan.

Jour. Geol., vol. 10, pp. 194-216, figs. 1-8, 1902.

Describes the general topography, drift and ice action, and scouring in the region.

- 960 **Shimek** (B.). *Pyramidula shimekii* (Pilsbry) Shimek.
Iowa St. Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 139-145, 1901.
- 961 — The loess of Natchez, Mississippi.
Am. Geol., vol. 30, pp. 279-299, pls. x-xvi, 1902.
Gives lists of fossils found in the loess and describes the formation and character of the loess deposits.
- 962 **Shimer** (Hervey W.). Petrographic description of the dikes of Grand Isle, Vermont.
Vt. Geol. Surv., Rept. State Geol., III, pp. 174-183, 1902; Columbia Univ., Contr. Geol. Dept., vol. 10, no. 87.
Discusses the composition and occurrence of the dikes on this island.
- 963 — and **Grabau** (Amadeus W.). Hamilton group of Thedford, Ontario.
Geol. Soc. Am., Bull., vol. 13, pp. 149-186, figs. 1-5, 1902; Columbia Univ., Geol. Dept., Contr., vol. 10, no. 83, 1902.
Describes the lithologic and faunal characters of the local sections, discusses the correlation of the beds and presents notes on some of the species.
- 964 **Silver** (L. P.). The sulphide ore bodies of the Sudbury region [Ontario].
Can. Mg. Inst., Jour., vol. 5, pp. 528-551, 1 fig., 9 pls., 1902; Can. Mg. Rev., vol. 21, pp. 207-211, 1902.
Discusses the occurrence and origin of the nickel-bearing ore deposits.
- 965 **Simonds** (Frederic W.). Dr. Ferdinand von Roemer, the father of Texas geology; his life and work.
Am. Geol., vol. 29, pp. 131-140, pl. v, 1902.
- 966 **Skeates** (E. M.). See Phillips (W. B.), 852.
- 967 **Slosson** (E. E.), **Knight** (W. C.) and. The Newcastle oil-field [Wyoming].
See Knight (W. C.) and Slosson (E. E.), 587.
- 968 **Smallwood** (Martin), **Hopkins** (T. C.) and. On some anticlinal folds [Pennsylvania].
See Hopkins (T. C.) and Smallwood (Martin), 532.
- 969 **Smith** (Charles E.). Work of the Cornell Summer School of field geology.
Am. Geol., vol. 30, pp. 396-397, 1902.
- 970 **Smith** (Eugene A.) and **Aldrich** (Truman H.). The Grand Gulf formation.
Science, new ser., vol. 16, pp. 835-837, 1902.
Discusses the age of this formation in the light of new data obtained by the authors.
- 971 — See Phillips (W. B.), 852.

- 972 **Smith** (Frank B.). Coal mining in the Northwest Territories and its probable future.

Can. Mg. Inst., Jour., vol. 5, pp. 104-112, 1902; Can. Mg. Rev., vol. 21, pp. 79-81, 1902.

Contains notes on the geologic occurrence of the coals.

- 973 **Smith** (Fred D.). The Osceola, Nevada, tungsten deposits.

Eng. & Mg. Jour., vol. 73, pp. 304-305, 1902.

Describes the occurrence and character of the ores.

- 974 **Smith** (G. F. Herbert). On the remarkable problem presented by the crystalline development of calaverite.

Min. Mag., vol. 13, pp. 122-150, figs. 1-9, 1902.

- 975 **Smith** (G. H.). Stateline mining district, Iron County, Utah.

Mg. & Sci. Press, vol. 84, p. 101, 1902.

Describes the general geology of the region and the mining developments.

- 976 **Smith** (George Otis). The Mount Baker mining district, Washington.

Eng. & Mg. Jour., vol. 73, pp. 379-380, 1902.

Contains notes on the geologic structure of this area and the occurrence of gold.

- 977 — Criticism of Dr. Jenney's paper [The mineral crest].

Eng. & Mg. Jour., vol. 73, p. 826, 1902.

Discusses the subject in the light of observations in the Tintic district, Utah.

- 978 — The coal fields of the Pacific coast.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 473-513, pls. xxxi-xxxiv, figs. 37-54, 1902.

Describes location, geologic relations and structure of the Pacific coast coal fields occurring in Washington, California and Oregon, the number, extent, and occurrence of the workable beds, the character, composition, mining and distribution of the coals.

- 979 **Smith** (James Perrin). Ueber Pelecypodenzone in der Trias Nord-Amerikas.

Centralbl. für Min., etc., no. 22, pp. 689-695, 1902.

Describes the distribution of Trias sediments and gives a table showing the occurrence and relations of pelecypods in the Trias in North America.

- 980 **Smyth** (C. H.). Petrography of recently discovered dikes in Syracuse, New York, with note on the presence of melilite in the Green Street dike.

Am. Jour. Sci., 4th ser., vol. 14, pp. 26-30, 1902.

Describes the megascopic and microscopic characters of the dike rocks.

- 981 — Tourmaline contact zones near Alexandria Bay, New York.

Am. Geol., vol. 29, pp. 377-383, 1902.

Describes the general characters and occurrence of the tourmaline zones and of the associated rocks.

- 982 **Spencer** (Arthur Coe). The manganese deposits of Santiago Province, Cuba.
Eng. & Mg. Jour., vol. 74, pp. 247-248, 3 figs., 1902.
- 983 — The Pacific Mountain system of British Columbia and Alaska.
Abstract: Science, new ser., vol. 16, pp. 261-262, 1902.
Discusses physiography of the mountainous region bordering the Pacific Ocean.
- 984 — **Hayes** (C. Willard), **Vaughan** (T. Wayland), and. Report on a geological reconnaissance of Cuba.
See Hayes (C. W.), Vaughan (T. W.) and Spencer (A. C.), 473.
- 985 — **Schrader** (Frank C.) and. The geology and mineral resources of a portion of the Copper River district, Alaska.
See Schrader (F. C.) and Spencer (A. C.), 941.
- 986 **Spencer** (Joseph William Winthrop). On the geological and physical development of Dominica; with notes on Martinique, St. Lucia, St. Vincent and the Grenadines.
London Geol. Soc., Quart. Jour., vol. 58, pp. 341-353, pl. x [map], figs. 1-2, 1902.
Contains notes on physiography and on the volcanic, gravel and terrace formations.
- 987 — On the geological and physical development of Barbados; with notes on Trinidad.
London Geol. Soc., Quart. Jour., vol. 58, pp. 354-370, figs. 1-2, 1902.
Discusses the physiographic and stratigraphic features.
- 988 — The Windward Islands of the West Indies.
Can. Inst., Trans., vol. 7, pp. 351-370, pls. i-viii, A-F, 1902.
Gives an account of physiographic and geologic features of these islands.
- 989 **Springer** (Frank). Uintacrinus: its structure and relations.
Harvard Coll., Mus. Comp. Zool., Mem., vol. 25, no. 1, pp. 1-89, pls. i-viii, 1901.
Describes occurrence, structure and relations of this crinoid from Cretaceous strata.
- 990 — On the crinoid genera Sagenocrinus, Forbesiocrinus, and allied forms.
Am. Geol., vol. 30, pp. 88-97, 1 fig., 1902.
Includes description of a new species of Sagenocrinus.
- 991 **Spurr** (Josiah Edward). Application of geology to mining.
Mg. & Sci. Press., vol. 85, pp. 145-146, 1902.
Discusses relations of geology and mining.

- 992 **Spurr** (Josiah Edward). The ore deposits of Monte Cristo, Washington.

U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 777-865, pls. lxxix-lxxxii, figs. 89-130, 1901.

Describes petrology, general geologic relations and structure of the area, and character, occurrence and origin of the ores.

- 993 — The ore deposits of Monte Cristo, Washington.

Eng. & Mg. Jour., vol. 74, pp. 240-241, 4 figs., 1902.

Describes the geologic occurrence of the ore deposits in this area.

- 994 — The original source of the Lake Superior iron ores.

Am. Geol., vol. 29, pp. 335-349, 1902.

Describes the origin of these ores as being derived from a sedimentary rock containing large quantities of glauconite.

- 995 **Stanton** (T. W.). The stratigraphic position of the Judith River beds. A correction of Mr. Hatcher's correction.

Science, new ser., vol. 16, pp. 1031-1032, 1902.

- 996 **Stearns** (C. H.). Some observations on the topography of Athens and vicinity [Ohio].

Ohio State Acad. Sci., 7th Ann. Rept., pp. 67-70, 1899.

Discusses present and former drainage in the vicinity of Athens, Ohio.

- 997 **Stearns** (Robert E. C.). Fossil shells of the John Day region [Oregon].

Science, new ser., vol. 15, pp. 153-154, 393, 1902.

Describes two new species.

- 998 **Steiger** (George). Preliminary note on silver chabazite and silver analcite.

Am. Jour. Sci., 4th ser., vol. 14, pp. 31-32, 1902.

Describes experiments undertaken to replace certain silicates by silver.

- 999 — **Clarke** (Frank Wigglesworth) and. The action of ammonium chloride upon silicates.

See Clarke (F. W.) and Steiger (George), 182.

- 1000 — **Diller** (J. S.) and. Volcanic dust and sand from St. Vincent caught at sea and the Barbados.

See Diller (J. S.) and Steiger (George), 286.

- 1001 **Stevenson** (John J.). Notes upon the Mauch Chunk of Pennsylvania.

Am. Geol., vol. 29, pp. 242-249, 1902.

Discusses the nomenclature of a portion of the Carboniferous, presents a section in Pennsylvania, giving a list of fossils from the various horizons determined by Weller, and discusses the correlation of the formations.

- 1002 — The Lower Carboniferous of the Appalachian Basin.

Abstract: Science, new ser., vol. 16, pp. 259-260, 1902.

1003 **Stoek** (H. H.). The Pennsylvania anthracite coal field.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 55-117, pls. vi-x, figs. 8-19, 1902.

Describes the extent, subdivisions, general geologic relations and structure of the Pennsylvania anthracite coal field, the number and extent of workable beds, the character, composition, production and marketing of the coal.

1004 **Storrs** (L. S.). The Rocky Mountain coal fields.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 415-471, pls. xxix, xxx, fig. 36, 1902.

Describes location, extent, geologic relations and development of coal areas in the Rocky Mountains region, the occurrence, thickness and extent of coal beds, and the character, composition and utilization of the coal and lignite.

1005 **Stretch** (R. H.). The Independent mine at Silverton, Snohomish County, Washington.

Eng. & Mg. Jour., vol. 73, p. 832, 1902.

Briefly describes the vein system and occurrence of gold ores.

T.1006 **Taff** (Joseph A.). Atoka Folio—Indian Territory.

U. S. Geol. Surv., Geol. Atlas of U. S., Folio no. 79, 1902.

Describes geographic and topographic features, the geologic structure, character and occurrence of pre-Cambrian, Cambrian, Cambro-Silurian, Silurian, Devonian, Carboniferous and Cretaceous strata, and the mineral resources, chiefly coal, granite and building stones.

1007 — The southwestern coal field.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 367-413, pls. xxv-xxviii, figs. 34, 35, 1902.

Describes location, extent, stratigraphy and geologic structure of this coal field occupying parts of Arkansas, Texas and Indian Territory, the number and extent of workable beds, the character, composition and production of the coal.

1008 — Chalk of southwestern Arkansas, with notes on its adaptability to the manufacture of hydraulic cements.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 687-742, pls. xlvii-liii, figs. 57-69, 1902.

Describes location, geologic age and occurrence of the chalk and chalk marl deposits of southwestern Arkansas, the geologic history of the region, character, composition, adaptability and utilization of the chalk, chalk-marls and clays of Arkansas in the manufacture of Portland cement.

1009 **Talmage** (James E.). The geology of Utah.

Int. Mg. Cong., 4th session, Proc., pp. 42-48, 1901.

Describes some of the geologic features of the State.

- 1010 **Tarr** (Ralph S.). Syllabus for field and laboratory work in dynamic, structural and physiographic geology (Geology 1) at Cornell University.

Ithaca, New York, 152 pp., 1902.

Contains directions for field and laboratory work in geology and elementary mineralogy and petrology.

- 1011 — The physical geography of New York State.

The MacMillan Company, New York. 397 pp., 210 figs., 1902.

Describes the general physiographic and drainage features and geologic development, the plains and plateaus and the influence of the Glacial period upon the topography and drainage systems of the State, and the physiographic and glacial geology of the Great Lakes region.

- 1012 **Tassin** (Wirt). Descriptive catalogue of the collection of gems in the U. S. National Museum.

U. S. Nat. Mus., Ann. Rept. for 1900, pp. 473-670, 9 pls., 26 text figs., 1902.

- 1013 — Descriptive catalogue of the meteorite collection in the U. S. National Museum to January 1, 1902.

U. S. Nat. Mus., Ann. Rept. for 1900, pp. 671-698, 4 pls., 1902.

- 1014 — The Casas Grandes meteorite.

U. S. Nat. Mus., Proc., vol. 25, pp. 69-74, pls. i-iv, 1902.

Describes occurrence and composition of a meteorite from Casas Grandes, Mexico.

- 1015 **Taylor** (F. B.). Surface geology of Lapeer County, Michigan; summary report of progress.

Mich. Geol. Surv., Ann. Rept. for 1901, pp. 111-117, pl. 6, 1902.

Describes the drift covering of the county and gives a sketch of the glacial history of the region.

- 1016 **Taylor** (L. H.). Water storage in the Truckee Basin, California-Nevada.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 68, 90 pp., 8 pls., 20 figs., 1902.

- 1017 **Taylor** (Thomas U.). Irrigation systems of Texas.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 71, 137 pp., 27 figs., 9 pls., 1902.

- 1018 **Teall** (J. J. H.). Volcanic dust from the West Indies.

Nature, vol. 66, p. 130, 1902.

Notes on chemical analysis of the dust.

- 1019 **Teller** (Edgar E.). The Hamilton formation at Milwaukee, Wisconsin.

Wis. Nat. Hist. Soc., Bull., new ser., vol. 1, pp. 47-56, 1 pl., 1900.

Reviews previous descriptions, describes the characters and succession of the strata and gives notes on the occurrence of characteristic fossils.

- 1020 **Thiele** (F. C.). Ueber Texas-petroleum.
Chemiker-Zeitung, Cöthen, vol. 25, pp. 175-176, 1901.
Discusses character and composition of oil from Texas.
- 1021 **Thomae** (W. F. A.). An ore formation on Prince of Wales Island (S. E. Alaska).
Inst. Mg. & Metal., Trans., vol. 10, pp. 44-48, 1902.
Describes the occurrence and discusses the origin of ore deposits upon this island.
- 1022 **Thomas** (Kirby). Mining developments in eastern Ontario.
Eng. & Mg. Jour., vol. 74, pp. 186-187, 1902.
- 1023 — Glacial gold in Wisconsin.
Eng. & Mg. Jour., vol. 74, p. 248, 1902.
- 1024 **Thyng** (William S.), **Lyon** (D. A.), and **Roberts** (Milnor), **Landes** (Henry). The metalliferous resources of Washington, except iron.
See Landes (H.), Thyng (W. S.), Lyon (D. A.), and Roberts (M.), 645.
- 1025 **Tight** (W. G.). Lake Licking—a contribution to the buried drainage of Ohio.
Ohio State Acad. Sci., 2d Ann. Rept., pp. 17-20 [1894].
- 1026 — Drainage modifications in Washington and adjacent counties [Ohio].
Ohio State Acad. Sci., Special Papers no. 3, pp. 11-31, 5 pls., 1900.
Describes present drainage system and topographic features of this area, and their bearing upon preglacial drainage.
- 1027 **Todd** (J. H.). Some observations on the pre-Glacial drainage of Wayne and adjacent counties [Ohio].
Ohio State Acad. Sci., Special Papers no. 3, pp. 46-67, map, 1900.
- 1028 **Todd** (James E.). Hydrographic history of South Dakota.
Geol. Soc. Am., Bull., vol. 13, pp. 27-40, pl. iii (map), figs. 1-3, 1902.
Discusses the earth movements that have affected the drainage features of the State.
- 1029 — Mineral building material, fuels and waters of South Dakota, with production for 1900.
So. Dak. Geol. Surv., Bull. no. 3, pp. 81-130, pls. xxii-xxxi, 1902; Stone, vol. 25, pp. 413-418, 521-524, 1903.
Describes the character and distribution of the building stones, cements, clays, fuels and mineral waters in the State.
- 1030 — See Winchell (N. H.), 1168.
- 1031 **True** (H. L.). The cause of the Glacial period: being a resumé and discussion of the current theories to account for the phenomena of the drift, with a new theory by the author.
Cincinnati, The Robert Clarke Company, xi, 162 pp., ill., 1902.

- 1032 **Turner** (Henry W.). Notes on unusual minerals from the Pacific States.
 Am. Jour. Sci., 4th ser., vol. 13, pp. 343-346, 1902.
 Describes occurrence and chemical characters of certain mineral phosphates, silicates and sulphates.
- 1033 — A sketch of the historical geology of Esmeralda County, Nevada.
 Am. Geol., vol. 29, pp. 261-272, 1902.
 Describes the general characters of the formations from pre-Cambrian time to recent, and discusses the geologic structure of the region.
- 1034 — The Greenback copper mine, Kern County, California.
 Eng. & Mg. Jour., vol. 74, pp. 547-548, 1 fig., 1902.
- 1035 — Unusual minerals from the Pacific States.
 Mg. & Sci. Press., vol. 84, p. 296, 1902.
 Describes occurrence of pyromorphite, monazite, apatite and vivianite.
- 1036 — An instance of variability in a rock magma.
 Abstract: Science, new ser., vol. 15, p. 411, 1902.
- 1037 — A post-Tertiary elevation of the Sierra Nevada shown by a comparison of the grades of the Neocene and present Tuolumne rivers.
 Abstract: Science, new ser., vol. 15, pp. 414-415, 1902.
- 1038 **Tutton** (C. H.). The laws of river flow.
 Assoc. of Eng. Soc., Jour., vol. 28, pp. 32-37, 1902.
 Contains discussion on the origin and flow of streams.

U.

- 1039 **Udden** (Johan August). A geological section across the northern part of Illinois,
 Ill. Bd. of World's Fair Commissioners, Rept., pp. 117-151, 1 pl. (section), 1895.
 Describes geology of northern Illinois and gives records of borings and other sections.
- 1040 — Loess with horizontal shearing planes.
 Jour. Geol., vol. 10, pp. 245-251, 1902.
 Describes partings in the loess and discusses their origin.
- 1041 — Geology of Jefferson County [Iowa].
 Iowa Geol. Surv., vol. 12, Ann. Rept. for 1901, pp. 357-437, figs. 60-63, geol. map, 1902.
 Describes physiographic and drainage features, the geologic formations, giving sections and lists of fossils, and the economic products of the county.
- 1042 — On the occurrence of rhizopods in the Pella beds in Iowa.
 Iowa Acad. Sci., Proc., vol. 9, p. 120, 1902.

- 1043 **Udden** (Johan August). Pleuroptyx in the Iowa Coal Measures.
Iowa Acad. Sci., Proc., vol. 9, p. 121, 1902.
- 1044 **Ulrich** (Edward O.). The lithographic stone deposits of eastern Kentucky.
Eng. & Mg. Jour., vol. 73, pp. 895-896, 2 figs., 1902.
Describes the geology of the region and the character of the lithographic stone.
- 1045 — and **Schuchert** (Charles). Paleozoic seas and barriers in eastern North America.
N. Y. State Mus., Bull. no. 52, pp. 633-663, pl. ix, 1902.
Reviews the evidences of the existence of barriers in the Paleozoic seas of the region, and discusses the relations and migrations of the faunas and the character and extent of the oscillations and their effect on the sedimentation and life.
- 1046 **Upham** (Warren). Time divisions of the Ice Age.
Victoria Inst., Jour. of Trans., vol. 33, pp. 393-410, 1901.
Describes glacial phenomena in North America, and discusses the correlation of the glacial deposits and time divisions of North America and Europe and the evidences as to the time of man's appearance upon the earth.
- 1047 — New evidence of epeirogenic movements causing and ending the Ice Age.
Am. Geol., vol. 29, pp. 162-169, 1902.
Reviews the work of Brögger and Nansen.
- 1048 — Growth of the Mississippi Delta.
Am. Geol., vol. 30, pp. 103-111, 1902.
Gives a historical sketch.
- 1049 — Man in the Ice Age at Lansing, Kansas, and Little Falls, Minnesota.
Am. Geol., vol. 30, pp. 135-150, pls. ii-iii, 1902.
Describes the deposits in which the remains were found and gives estimates of the duration of the various divisions of the Ice Age.
- 1050 — Man in Kansas during the Iowan stage of the Glacial period.
Science, new. ser., vol. 16, pp. 355-356, 1902.
Describes the discovery and occurrence of human remains in glacial deposits near Lansing, Kansas.
- 1051 — The fossil man of Lansing, Kansas.
Records of the Past, vol. 1, pp. 272-275, 3 figs., 1902.
Describes the finding of human remains near Lansing, Kansas, and discusses their antiquity.
- 1052 — Primitive man and stone implements in the North American loess.
Am. Ant., vol. 24, pp. 413-420, 1902.
Describes the occurrence of human remains in the loess near Lansing, Kans.

1053 **Upham** (Warren). Primitive man in the Ice Age.

Bibliotheca Sacra, vol. 59, pp. 730-743, 1902.

Describes the occurrence of human remains in the loess near Lansing, Kansas, and discusses geological history during the Ice Age.

1054 — Primitive man in the Ice Age.

Memoirs of Explorations in the Basin of the Mississippi, vol. 5, Kakabikansing, pp. 116-119, St. Paul, Minn., 1902.

Discusses evidences as to the origin and antiquity of man in Europe and America and his place in the geological scale.

1055 — See Winchell (N. H.), 1168.

1056 **Ussing** (N. V.). Mineralogisk-petrografiske undersøgelser af Groenlandske nefelinsyeniter og beslægtede bjælgarter.

Meddelelser om Groenland, vol. 14, pp. 1-220, pls. i-vii, 1898.

Describes mineralogy and petrology of Greenland.

V.

1057 **Van Hise** (Charles R.). Introduction to "Preliminary report on the lead and zinc deposits of the Ozark region," by H. F. Bain.

U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 33-60, 1901.

Discusses character, origin and concentration of lead and zinc ores of the upper Mississippi Valley and of the Ozark region of the lower Mississippi Valley.

1058 — Geological excursion in Colorado.

Geol. Soc. Am., Bull., vol. 13, pp. 2-5, 1901.

Contains brief notes on the geology of the points visited.

1059 — The training and work of a geologist.

Am. Geol., vol. 30, pp. 150-170, 1902; Science, new ser., vol. 16, pp. 321-334, 1902; Am. Assoc. Adv. Sci., Proc. Fifty-first meeting, pp. 399-420, 1902.

1060 — Some principles controlling the deposition of ores. [Continuation of paper in vol. 30, 1901.]

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 284-302, 1902.

Reviews recent papers that have been published since the author's discussions of the subject, with special reference to the paper by Professor Kemp on "The rôle of the igneous rocks in the formation of veins."

1061 — and **Bain** (H. Foster). Lead and zinc deposits of the Mississippi Valley, U. S. A.

Inst. Mg. Engrs. [England], Trans., vol. 23, pp. 376-434, 14 figs., 1902.

Describes the geographic distribution and stratigraphy of the lead and zinc producing areas of the Mississippi Valley and discusses the occurrence and genesis of the ore deposits.

- 1062 **Van Ingen** (Gilbert). Potsdam sandstone of the Lake Champlain Basin.
N. Y. State Mus., Bull. no. 52, pp. 529-545, geol. map, 1902.
Describes certain sections and discusses briefly the results of the investigations.
- 1063 **Vaughan** (T. Wayland). The locality of the type of *Prionastræa vaughani*, Gregory.
Ann. & Mag. Nat. Hist., 7th ser., vol. 7, p. 300, 1901.
- 1064 — Bitumen in Cuba.
Eng. & Mg. Jour., vol. 73, pp. 344-347, 2 figs., 1902.
Describes the occurrence and character of the material.
- 1065 — Notes on Cuban fossil mammals.
Science, new ser., vol. 15, pp. 148-149, 1902.
Questions the occurrence of certain fossil remains in Cuba and gives a note on the priority of *Megalocnus Leidy* over *Myomorphus Pomel*.
- 1066 — Earliest Tertiary coral reefs in the Antilles and United States.
Abstract: Science, new ser., vol. 15, pp. 506-507, 1902.
- 1067 — Evidence of recent elevation of the Gulf coast along the westward extension of Florida.
Science, new ser., vol. 16, p. 5-14, 1902.
- 1068 — **Hayes** (C. Willard), and **Spencer** (Arthur Coe). Report on a geological reconnaissance of Cuba.
See Hayes (C. W.), Vaughan (T. W.), and Spencer (A. C.), 473.
- 1069 — **Hill** (Robert T.) and. Austin Folio—Texas.
See Hill (R. T.) and Vaughan (T. W.), 505.
- 1070 — and **Spencer** (Arthur Coe). The geography of Cuba.
Am. Geog. Soc., Bull., vol. 34, pp. 105-116, 1902.
Describes the mountains, plains, terraces, drainage and harbors of Cuba.
- 1071 **Veatch** (Arthur C.). The salines of north Louisiana.
La. Geol. Surv., pt. 6, pp. 47-100, pls. xi-xxiii, figs. 8-9, 1902.
Describes the local geology of the various salt works and discusses the geological structure and history of the region.
- 1072 — The geography and geology of the Sabine River, Louisiana.
La. Geol. Surv., pt. 6, pp. 107-141, pls. xxiv-xxxvii, figs. 10-13, 1902.
Describes the physiography and the character and occurrence of the Tertiary strata of the region.
- 1073 — Notes on the geology along the Ouachita [Louisiana].
La. Geol. Surv., pt. 6, pp. 153-170, pls. xxxviii-xxxix, 1902.
Describes the physiography and Tertiary beds of the region.

- 1074 **Verrill** (A. E.). Peculiar character of the eruption of Mt. Pelée, May 8th.

Am. Jour. Sci., 4th ser., vol. 14, pp. 72-74, 1902.

Discusses the cause of the destruction of St. Pierre.)

- 1075 **Very** (Frank W.). A cosmic cycle.

Am. Jour. Sci., 4th ser., vol. 13, pp. 47-58, 97-114, 185-196, 1902.

- 1076 **Villareello** (Juan de D.) and **Böse** (Emilio). Criaderos de fierro de la hacienda de Vaquerias, en el estado de Hidalgo.

Mexico Inst. Geol., Bull. no. 16, pp. 15-44, pls. ii-v, figs. 1-5, 1902.

Describes the topography, geology and petrology, and discusses the occurrence of iron ores in this area.

- 1077 **Vogt** (J. H. L.). Problems in the geology of ore-deposits.

Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 125-169, 1902.

Discusses genesis of ore deposits.

W.

- 1078 **Wagenen** (T. H. van). Nitrate deposits, Humboldt County, Nevada.

Mg. & Sci. Press., vol. 84, p. 63, 1902.

Brief description of occurrence.

- 1079 **Walcott** (Charles Doolittle). Outlook of the geologist in America.

Geol. Soc. Am., Bull., vol. 13, pp. 99-118, 1902.

Reviews the geologic investigations that have been undertaken in North America by organizations and individuals, broadly outlines the problems that are being studied and discusses the future prospects of geologists.

- 1080 — Cambrian brachiopoda: *Acrotreta*; *Linnarssonella*; *Obolus*; with descriptions of new species.

U. S. Nat. Mus., Proc., vol. 25, pp. 577-612, 1902.

- 1081 — Twenty-third Annual Report of the Director of the U. S. Geological Survey to the Secretary of the Interior. 217 pp., 26 pls., 1902.

Gives an account of the work of the U. S. Geological Survey for the year 1901-2.

- 1082 **Wallace** (E. C.), **Richardson** (Clifford) and. Petroleum from the Beaumont, Texas, field.

See Richardson (Clifford) and Wallace (E. C.), 897.

- 1083 **Ward** (Henry A.). The St. Genevieve meteorite.

Rochester Acad. Sci., Proc., vol. 4, pp. 65-66, pl. i, 1901.

Describes occurrence and characters of this meteorite from Ste. Genevieve County, Mo.

- 1084 **Ward** (Henry A.). Description of four meteorites.
Rochester Acad. Sci., Proc., vol. 4, pp. 79-88, pls. vii-xi, 1902.
Describes meteorites from Andover, Me.; Cuernavaca, Mexico; Arispe, Mexico; and from near Williamsport, Pa.
- 1085 — On Bacubirito, or the great meteorite of Sinaloa, Mexico.
Am. Geol., vol. 30, pp. 203-211, pls. iv-ix, 1902; Rochester Acad. Sci., Proc., vol. 4, pp. 67-74, pls. ii-v, 1902.
Describes occurrence, size and characters of this meteoric mass.
- 1086 **Warman** (Philip Creveling). Catalogue and index of the publications of the United States Geological Survey, 1880 to 1901.
U. S. Geol. Surv., Bull., no. 177, 858 pp., 1901.
- 1087 **Washington** (Henry S.). Igneous rocks from eastern Siberia.
Am. Jour. Sci., 4th ser., vol. 13, pp. 175-184, 1 fig., 1902.
Compares the characters of some of these rocks with similar rocks occurring in this country.
- 1088 — **Cross** (Whitman), **Iddings** (Joseph P.), **Pirsson** (Louis V.) and. A quantitative chemico-mineralogical classification and nomenclature of igneous rocks.
See Cross (W.), Iddings (J. P.), Pirsson (L. V.), and Washington (H. S.), 228.
- 1089 **Watson** (Lawrence W.). Prince Edward Island.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 206-208, 1902.
Describes the author's field work in this area.
- 1090 **Watson** (Thomas L.). On the occurrence of aplite, pegmatite and tourmaline bunches in the Stone Mountain granite of Georgia.
Jour. Geol., vol. 10, pp. 186-193, pls. vii-viii, 1902; Denison Univ., Sci. Lab., Bull., vol. 12, pp. 17-24, pls. iv-v, 1902.
- 1091 — Copper-bearing rocks of Virginia copper district, Virginia and North Carolina.
Geol. Soc. Am., Bull., vol. 13, pp. 353-376, pls. liv-lvi, 1 fig., 1902.
Describes the megascopic and microscopic characters of the rocks, the evidences of eruptive character and the ore deposits of the district.
- 1092 — On the occurrence of uranophane in Georgia.
Am. Jour. Sci., 4th ser., vol. 13, pp. 464-466, 1902; Denison Univ. Sci. Lab., Bull., vol. 12, pp. 25-28, 1902.
Describes its occurrence and chemical character.
- 1093 — A preliminary report on a part of the granites and gneisses of Georgia.
Ga. Geol. Surv., Bull. no. 9-A, 367 pp., 32 pls., 1902.
Discusses geological age, mode of occurrence, origin and distribution of granites in Georgia and eastern United States, their chemical and lithologic characteristics, and gives chemical analyses. The geography and physiography of the Georgia portion of the Piedmont Plateau are described.

- 1094 **Weatherbe** (D'Arcy). Recent developments with the calyx drill in the Nictaux iron field [Nova Scotia].
Nova Scotian Inst. Sci., Trans., vol. 10, pp. 350-360, pls. v-vi, 1902.
Contains notes on the geology of the area.
- 1095 **Weed** (Walter Harvey). Geology and ore deposits of the Elkhorn mining district, Jefferson County, Montana.
U. S. Geol. Surv., 22d Ann. Rept., pt. 2, pp. 399-510, pls. xlii-lxi, figs. 72-78, 1901.
Describes history of mining operations in this district, the character and occurrence of igneous and metamorphic rocks and strata of Algonkian, Cambrian, Devonian, Carboniferous and Mesozoic age, and discusses the general geologic structure, relations of the rock masses, the character, occurrence, mode of formation and commercial development of the ore bodies.
- 1096 — Influence of country rock on mineral veins.
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 634-653, 8 figs, 1902.
Discusses origin of certain ore deposits.
- 1097 — [In discussion of "The origin of ore deposits."]
Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 959-962, 1902.
- 1098 — Notes on certain mines in the States of Chihuahua, Sinaloa and Sonora, Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 396-443, figs. 1-28, 1902.
Contains notes on the geology of these States, and the character and occurrence of the ores.
- 1099 — Notes on a section across the Sierra Madre Occidental of Chihuahua and Sinaloa, Mexico.
Am. Inst. Mg. Engrs., Trans., vol. 32, pp. 444-458, 1 pl. (sections), 1902.
Contains observations on the geology and petrology of the region.
- 1100 — Recent development of southern copper deposits.
Eng. & Mg. Jour., vol. 74, pp. 80-81, 1902.
- 1101 — Contact metamorphic and other ore deposits near igneous contacts.
Eng. & Mg. Jour., vol. 74, p. 513, 1902.
- 1102 — The Cananea copper deposits, Mexico.
Eng. & Mg. Jour., vol. 74, pp. 744-745, 4 figs., 1902.
- 1103 **Weeks** (Fred Boughton). Gold-bearing quartzites of eastern Nevada.
Abstract: Science, new ser., vol. 15, p. 546, 1902.
- 1104 — Bibliography of North American geology, paleontology, petrology, and mineralogy for the years 1892-1900, inclusive.
U. S. Geol. Surv., Bull. no. 188, 717 pp., 1902.

- 1105 **Weeks** (Fred Boughton). Index to North American geology, paleontology, petrology, and mineralogy for the years 1892-1903, inclusive.
U. S. Geol. Surv., Bull. no. 189, 337 pp., 1902.
- 1106 — North American geologic formation names: bibliography, synonymy, and distribution.
U. S. Geol. Surv., Bull. no. 191, 448 pp., 1902.
- 1107 — Bibliography and index of North American geology, paleontology, petrology and mineralogy for the year 1901.
U. S. Geol. Surv., Bull. no. 203, 144 pp., 1902.
- 1108 **Weller** (Stuart). The composition, origin and relationship of the Corniferous fauna in the Appalachian province in North America.
Jour. Geol., vol. 10, pp. 423-432, 1902.
Presents a comparative list of Corniferous and Oriskany faunas, describes the distribution and relations of these faunas and discusses the origin of the Corniferous fauna.
- 1109 — *Crotalocrinus cora* (Hall).
Jour. Geol., vol. 10, pp. 532-534, pl. iii, 1902.
Describes material from the Niagara group and gives the synonymy of *Crotalocrinus cora*.
- 1110 — **Kümmel** (Henry B.) and. The rocks of the Green Pond Mountain region.
See Kümmel (H. B.) and Weller (S.), 609.
- 1111 — See Stevenson (J. J.), 1001.
- 1112 **Wells** (H. L.) and **Penfield** (S. L.). On a new occurrence of sperrylite.
Am. Jour. Sci., 4th ser., vol. 13, pp. 95-96, 1902.
Describes occurrence in platiniferous copper ore from Wyoming.
- 1113 **Wells** (J. Walter). Arsenic in Ontario.
Ont. Bureau Mines, Rept. for 1902, pp. 101-122, pls. ix-xii, 1902.
Describes distribution, manufacture, production and uses of arsenic.
- 1114 **Wheeler** (George D.). Zinc in Crittenden County, Kentucky.
Eng. & Mg. Jour., vol. 74, pp. 413-414, 3 figs., 1902.
- 1115 **Whitbeck** (R. H.). The pre-Glacial course of the middle portion of the Genesee River [New York].
Am. Geog. Soc., Bull., vol. 34, pp. 32-44, figs. 1-9, 1902.
Contains notes on the physiography and discusses the evidences regarding the pre-Glacial course of this river.
- 1116 **White** (David). Description of a fossil Alga from the Chemung of New York with remarks on the genus *Haliserites* Sternberg.
N. Y. State Mus., Bull. no. 52, pp. 593-605, pls. iii-iv, 1902.
Describes *Thamnocladus clarkei*, n. gen. et sp.

- 1117 **White** (David). The bituminous coal field of Maryland.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 201-214, 1902.
Describes area, structure and development of the field, and character, occurrence and production of the coal beds.
- 1118 — Stratigraphy versus paleontology in Nova Scotia.
Science, new ser., vol. 16, pp. 232-235, 1902.
Discusses the age and evidences therefor of certain beds in the region of the Bay of Fundy.
- 1119 — a **Campbell** (Marius R.). The bituminous coal field of Pennsylvania.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 127-200, figs. 21-25, 1902.
Describes extent, geologic structure and development of the field, character, occurrence and productiveness of the coal beds, gives chemical analyses of the coals and discusses their economic value.
- 1120 — **Campbell** (Marius R.), and **Haseltine** (Robert M.). The northern Appalachian coal field.
U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 119-226, pls. xi-xii, figs. 20-25, 1902.
- 1121 — See Lane (A. C.), 646.
- 1122 **White** (Israel C.). The geology of West Virginia.
Int. Mg. Cong., 4th session, Proc., pp. 56-61, 1901.
Presents a summary of the geologic history of the State.
- 1123 — Geological horizon of the Kanawha black flint.
Geol. Soc. Am., Bull., vol. 13, pp. 119-126, 1902.
Reviews previous investigations of the stratigraphic problems involved in this discussion; presents the author's recent observations, and discusses the relative value of stratigraphic and paleobotanic data.
- 1124 — List of fossils from the lower half of the Conemaugh formation near Morgantown, West Virginia, collected in 1870 by Dr. John J. Stevenson and identified by F. B. Meek.
Am. Geol., vol. 30, pp. 211-214, 1902.
- 1125 — The geology of the Pittsburgh district.
Abstract: Science, new ser., vol. 16, pp. 258-259, 1902.
Gives a general sketch of the stratigraphy of the Coal Measures and of geological history during Quaternary times.
- 1126 **Whiteaves** (J. F.). On the genus *Trimerella*, with descriptions of two supposed new species of that genus from the Silurian rocks of Keewatin.
Ottawa Nat., vol. 16, pp. 139-143, pls. ii-iii, 1902.
- 1127 — On the genus *Panenka*, Barrande, with a description of a second species of that genus from the Devonian rocks of Ontario.
Ottawa Nat., vol. 15, pp. 263-265, pl. xv, 1902.

- 1128 **Whiteaves** (J. F.) Paleontology and zoology.
Can. Geol. Surv., Summ. Rept. for 1901, pp. 251-258, 1902.
Reports upon the paleontological work accomplished by the author's department.
- 1129 **Whitfield** (Robert Parr). Description of a new form of *Myalina* from the Coal Measures of Texas.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 63-66, figs. 1-2, 1902.
- 1130 — Observations on and emended description of *Heteroceras simplicostatum* Whitfield.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 67-72, pls. xxiii-xxvii, 1902.
- 1131 — Description of a new *Teredo*-like shell from the Laramie group.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 73-76, pls. xxviii-xxix, fig., 1902.
- 1132 — Notice of a new genus of marine algæ, fossil in the Niagara shale.
Am. Mus. Nat. Hist., Bull., vol. 16, pp. 399-400, pl. liii, 1902.
Describes *Palæodictyota* n. gen.
- 1133 **Whitlock** (Herbert P.). Guide to the mineralogic collections of the New York State Museum.
N. Y. State Mus., Bull. 58, pp. 3-147, 39 pls., 249 figs., 11 models in pocket, 1902.
Gives an outline of crystallography and describes characters, composition and occurrence of minerals.
- 1134 **Whitney** (Milton). Report on the examination of some soils from Illinois.
Ill. Bd. of World's Fair Commissioners, Rept., pp. 93-114, 1895.
- 1135 **Wieland** (G. R.). Notes on the Cretaceous turtles, *Toxochelys* and *Archelon*, with a classification of the marine Testudinata.
Am. Jour. Sci., 4th ser., vol. 14, pp. 95-108, figs. 1-2, 1902.
- 1136 **Wilcox** (Walter D.). Recent exploration in the Canadian Rockies.
Nat. Geog. Mag., vol. 13, pp. 151-168, 13 figs., pp. 185-200, 9 figs., 1902.
Contains notes on the physiography of the region.
- 1137 **Wilder** (Frank A.). The lignite deposits of North Dakota.
Eng. & Mg. Jour., vol. 74, pp. 674-675, 3 figs., 1902.
- 1138 — The lignite coal fields of North Dakota.
N. Dak. Geol. Surv., 2d Bien. Rept., pp. 33-55, pls. iv-viii, 1902.
Describes character and occurrence of the deposits of lignite.

- 1139 **Wilder** (Frank A.) *Geology of Webster County [Iowa].*
 Iowa Geol. Surv., vol. 12, Ann. Rept. for 1901, pp. 65-191, pls. vii-x, figs. 2-27, geol. map, 1902.
 Describes physiographic features and geology of the county, and discusses the origin, geologic and geographic occurrence and utilization of gypsum deposits and other economic products.
- 1140 **Williams** (Edward H.). *Kansas glaciation and its effects on the river system of northern Pennsylvania.*
 Wyoming [Pa.] Hist. & Geol. Soc., Proc. & Coll., vol. 7, pp. 21-28, 11 figs., 1902.
 Discusses drainage modifications produced by the ice of the Glacial period.
- 1141 **Willard** (Daniel E.). *The story of the prairies, or, the landscape geology of North Dakota.* Ed. 3, 256 pp., 83 figs., 1902.
 Describes the physiography and geology of North Dakota.
- 1142 **Williams** (Henry Shaler). *Fossil faunas and their use in correlating geological formations.*
 Am. Jour. Sci., 4th ser., vol. 13, pp. 417-432, 1902.
 Discusses methods of employing fossil faunas in correlating definite formations and their limitations.
- 1143 **Willis** (Bailey). *Paleozoic Appalachia or the history of Maryland during Paleozoic time.*
 Md. Geol. Surv., vol. 4, pp. 23-93, pls. i-xii, fig. 1, 1902.
 Describes action of dynamic forces upon land surfaces and history of orographic movements and geographic changes during Paleozoic time affecting the area in which Maryland is situated.
- 1144 — *Stratigraphy and structure, Lewis and Livingston ranges, Montana.*
 Geol. Soc. Am., Bull., vol. 13, pp. 305-352, pls. xlii-liv (pl. xlviii, map), figs. 1-6, 1902.
 Describes the physiography, the occurrence and character of the Algonkian, Carboniferous, Cretaceous and Pleistocene formations and the geologic structure of the region.
- 1145 — *Structure of the Front Range, northern Rocky Mountains, Montana.*
 Abstract: Science, new ser., vol. 15, pp. 86-87, 1902.
- 1146 — *Physiography of the northern Rocky Mountains.*
 Abstract: Science, new ser., vol. 15, p. 87, 1902.
- 1147 — *Conditions of overthrust in the northern Rockies.*
 Abstract: Science, new ser., vol. 15, p. 507, 1902.
- 1148 — *Mountain growths of the Great Plains.*
 Abstract: Science, new ser., vol. 16, pp. 1028-1029, 1902.

- 1149 **Willis** (Bailey) and others. New York City Folio—New York—New Jersey.
See Merrill (F. J. H.) and others, 770.
- 1150 **Williston** (S. W.). On the hind limb of *Protostega*.
Am. Jour. Sci., 4th ser., vol. 13, pp. 276-278, fig. 1, 1902.
- 1151 — An arrow-head found with bones of *Bison occidentalis* Lucas in western Kansas.
Am. Geol., vol. 30, pp. 313-315, 1 fig., 1902.
Gives a section of the locality where the bones were found.
- 1152 — On the skull of *Nyctodactylus*, an Upper Cretaceous Pterodactyl.
Jour. Geol., vol. 10, pp. 520-534, pls. i-ii, 1902.
Describes new material from western Kansas.
- 1153 — Winged reptiles.
Pop. Sci. Monthly, vol. 60, pp. 314-322, 6 figs., 1902.
- 1154 — On the skeleton of *Nyctodactylus* with restoration.
Am. Jour. Anat., vol. 1, pp. 297-305, 1 fig., 1902.
- 1155 — Restoration of *Dolichorhynchops osborni*, a new Cretaceous plesiosaur.
Kans. Univ., Sci. Bull., vol. 1, pp. 241-244, pl. xi, 1902.
- 1156 — Notes on some new or little-known extinct reptiles.
Kans. Univ., Sci. Bull., vol. 1, pp. 247-254, pls. xii-xiii, 1902.
- 1157 — On certain homoplastic characters in aquatic air-breathing vertebrates.
Kans. Univ., Sci. Bull., vol. 1, pp. 259-266, 1902.
Discussion mainly of fossil forms.
- 1158 — A fossil man from Kansas.
Science, new ser., vol. 16, pp. 195-196, 1902.
Describes occurrence of human remains in loess near Lansing, Kansas.
- 1159 — The Laramie Cretaceous of Wyoming.
Science, new ser., vol. 16, pp. 952-953, 1902.
Discusses age of the Laramie deposits of Converse County, Wyoming, and gives notes on the fossils found in them.
- 1160 **Willmott** (A. B.). The nomenclature of the Lake Superior formations.
Jour. Geol., vol. 10, pp. 67-76, 1902.
Discusses the use of names for the subdivisions of the Archean and Algonkian of the region.
- 1161 — **Coleman** (A. P.) and. The Michipicoten iron ranges [Ontario].
See Coleman (A. P.) and Willmott (A. B.), 207.

- 1162 **Willmott** (A. B.), **Coleman** (A. P.) and. The Michipicoten iron region [Ontario].
See Coleman (A. P.) and Willmott (A. B.), 208.
- 1163 **Wilson** (Alfred W. G.). Some recent folds in the Lorraine shales [Ontario].
Can. Rec. Sci., vol. 8, pp. 525-531, 4 pls., fig., 1902.
Describes the occurrence and origin of the local folds.
- 1164 — The country west of Nipigon Lake and River [Canada].
Can. Geol. Surv., Summ. Rept. for 1901, pp. 94-103, 1902.
Describes the author's observations upon the geology, topography and economic resources of this region.
- 1165 **Wilson** (W. J.). Western part of the Abitibi region [Canada].
Can. Geol. Surv., Summ. Rept. for 1901, pp. 115-128, 1902.
Describes the author's observations in this region.
- 1166 **Winchell** (Horace V.). The ore deposits of Monte Cristo, Washington.
Am. Geol., vol. 30, pp. 113-118, 1902.
Reviews a paper by J. E. Spurr.
- 1167 **Winchell** (Newton H.). A new iron-bearing horizon in the Keewatin in Minnesota.
Lake Sup. Mg. Inst., Proc., vol. 5, pp. 46-48 [1898?].
Contains notes on the geology and occurrence of ore in this region.
- 1168 — Geological atlas with synoptical descriptions [Minnesota].
Minn. Geol. & Nat. Hist. Surv., Final Rept., vol. 6, 88 pls., 1901.
- 1169 — Sketch of the iron ores of Minnesota.
Am. Geol., vol. 29, pp. 154-162, 1902; Int. Mg. Cong., 4th session, Proc., pp. 136-140, 1902.
Describes the general geology and the occurrence and origin of the iron ores.
- 1170 — The geology of the Mississippi Valley at Little Falls, Minnesota.
Memoirs of Explorations in the Basin of the Mississippi, vol. 5, Kakabikansing, pp. 89-104, 1902.
Describes occurrence and character of strata at this locality and sketches their geological history.
- 1171 — Regeneration of clastic feldspar.
Abstract: Science, new ser., vol. 15, p. 85, 1902.
- 1172 — The Monthly American Journal of Geology and Natural Science.
Am. Geol., vol. 30, pp. 62-64, 1902.
Gives an account of this publication issued in 1831-2.

- 1173 **Winchell** (Newton H.). The Sutton Mountain.
 Am. Geol., vol. 30, pp. 118-120, 1902.
 In discussing the geology of the region refers to an article by J. A. Dresser.
- 1174 — The Lansing [Kansas] skeleton.
 Am. Geol., vol. 30, pp. 189-194, 1902.
 Describes the deposits in which the skeleton was found and gives an estimate of its age.
- 1175 **Wolff** (John E.). Leucite-tinguaite from Beemerville, New Jersey.
 Harv. Coll., Mus. Comp. Zool., Bull., vol. 38, pp. 273-277, 1902.
 Describes this rock and gives chemical analyses.
- 1176 — and **Palache** (Charles). Apatite from Minot, Maine.
 Am. Acad. Arts & Sci., Proc., vol. 37, pp. 517-528, pl., 1902; Zeitsch. für Kryst. u. Min., vol. 36, pp. 438-448, pl. xiv, 1902.
 Describes occurrence, crystallography, chemical composition and properties of a specimen from Maine.
- 1177 **Woodward** (Henry). The Canadian Rockies. Part I: On a collection of Middle Cambrian fossils obtained by Edward Whymper, esq., F. R. G. S., from Mount Stephen, British Columbia.
 Geol. Mag., dec. iv, vol. 9, pp. 502-505, 529-544, pl. xxii, 7 text figs., 1902.
 Gives a geological section of Mount Stephen and describes fossils from this locality.
- 1178 **Woodworth** (Jay Backus). Pleistocene geology of portions of Nassau County and Borough of Queens [New York].
 N. Y. State Mus., 54th Ann. Rept., vol. 4, 1902.
 See no. 858 in U. S. Geol. Surv., Bull. no. 203.
- 1179 — The Atlantic coast Triassic coal field.
 U. S. Geol. Surv., 22d Ann. Rept., pt. 3, pp. 25-53, pls. ii-v, figs. 1-7, 1902.
 Describes extent, general geologic relations and structure of this coal field occupying parts of Virginia and North Carolina, the number, thickness and extent of the coal beds, and the character, composition and production of the coal.
- 1180 — The history and conditions of mining in the Richmond coal-basin, Virginia.
 Am. Inst. Mg. Engrs., Trans., vol. 31, pp. 477-484, 2 figs. (geol. map and section), 1902.
 Describes geologic conditions in this coal field.
- 1181 **Woolman** (Lewis). Artesian wells.
 N. J. Geol. Surv., Ann. Rept. for 1901, pp. 53-128, 1902.
 Contains records of wells and notes on the strata passed through.
- 1182 **Wortman** (J. L.). The probable successors of certain North American primates.
 Science, new ser., vol. 13, pp. 209-211, 1901.

- 1183 **Wortman** (J. L.). Studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Am. Jour. Sci., 4th ser., vol. 14, pp. 17-23, figs. 96-99, 1902.

Describes two new species of *Sinopa*, discusses certain relations of the creodonts and gives a summary of the author's previous papers on the Eocene carnivora in the Marsh collection.

- 1184 — Studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Am. Jour. Sci., 4th ser., vol. 13, pp. 39-46, figs. 61-64, 1902.

Describes *Mesonyx obtusidens* Cope and discusses the origin of the tritubercular molar.

- 1185 — Studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Am. Jour. Sci., 4th ser., vol. 13, pp. 115-128, figs. 65-70, 1902.

Discusses the character and habits of *Patriofelis ferox* Marsh.

- 1186 — Studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Am. Jour. Sci., 4th ser., vol. 13, pp. 197-206, pl. vi, figs. 71-82, 1902.

- 1187 — Studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Am. Jour. Sci., 4th ser., vol. 13, pp. 433-448, pls. vii-viii, figs. 83-95, 1902.

Describes *Sinopa rapax* Leidy and *S. agilis* Marsh.

- 1188 **Wright** (Albert A.). New evidence upon the structure of *Dinichthys*.

Ohio State Acad. Sci., 5th Ann. Rept., pp. 59-60, 1897.

- 1189 — Ohio boulders containing "huronite."

Ohio State Acad. Sci., 5th Ann. Rept., pp. 60-61, 1897.

- 1190 **Wright** (F. E.). A new combination wedge for use with the petrographical microscope.

Jour. Geol., vol. 10, pp. 33-35, fig. 1, 1902.

- 1191 **Wright** (G. Frederick). Report of the boulder committee of the Ohio State Academy of Sciences.

Ohio State Acad. Sci., 2d Ann. Rept., pp. 5-10 [1894].

Discusses source and distribution of glacial boulders.

- 1192 — Report of the boulder committee of the Ohio State Academy of Sciences.

Ohio State Acad. Sci., 3d Ann. Rept., pp. 6-7 [1895].

Discusses distribution and source of glacial boulders in Ohio.

- 1193 — The rate of lateral erosion at Niagara.

Am. Geol., vol. 29, pp. 140-143, pl. vi, 2 figs., 1902.

Gives the results of measurements to determine the rate at which the face of the gorge crumbles away under the influence of subaerial agencies.

ADDENDA TO BIBLIOGRAPHIES FOR PREVIOUS YEARS.

1892	1893	1894	1895	1896	1897	1898	1899
681	543	540	193	198	199	50	250
	682	1025	194	932	491	51	251
		1191	479	933	776	52	781
			541		1188	53	820
			683		1189	175	894
			803			337	996
			804			379	
			1039			438	
			1134			844	
			1192			895	
						1056	
						1167	

1900	1901					
103	4	332	568	715	897	
107	7	354	569	720	927	
143	16	366	582	721	936	
387	17	380	589	741	938	
388	41	423	590	742	941	
389	42	439	591	743	960	
527	44	453	592	744	989	
528	64	454	600	745	992	
810	69	455	602	751	1009	
837	96	456	606	762	1020	
845	98	465	637	775	1046	
894	132	466	638	783	1057	
906	142	473	646	784	1058	
926	148	482	647	807	1063	
948	236	492	648	814	1082	
1019	252	493	660	817	1083	
1026	267	499	687	832	1086	
1027	269	512	696	858	1095	
	270	514	698	860	1122	
	271	529	700	882	1168	
	321	542	701	884	1182	
		567				

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 Lead, Aguilera, 14.
 Lead, Bain, 44.
 Lead, Branner, 110.
 Lead, Emmons, 345.
 Lead, Hedburg, 480.
 Lead, Keyes, 570.
 Lead, Malcolmson, 731.
 Lead, Nason, 791.
 Lead, O'Harra, 815.
 Lead, Van Hise and Bain, 1061.
 Lignite, Storrs, 1004.
 Lignite, Wilder, 1137, 1138.
 Lime, Ries, 908.
 Limestone, Donald, 289.
 Limestone, Eckel, 322.
 Limestone, Fisher, 371.
 Limestone, Gregory, 430, 431.
 Limestone, Hayes, 475.
 Limestone, Landes, 643.
 Limestone, Lane, 651, 652.
 Limestone, Lindgren, 687.
 Limestone, Martin, 736.
 Limestone, Pratt, 865.
 Limestone, Ries, 908.
 Lithographic stone, Ulrich, 1044.
 Loess, Keyes, 567.
 Manganese, Aguilera, 14.
 Manganese, Hayes, Vaughan, and Spencer, 473.

Economic geology—Continued.*Economic products described—Continued.*

Manganese, Lindgren, 687.
 Manganese, O'Harra, 815.
 Manganese, Pratt, 865.
 Manganese, Spencer, 982.
 Marble, Eckel, 322.
 Marble, Perkins, 844, 849.
 Marble, Pratt, 864, 865.
 Marble, Richardson, 896.
 Marl, Ellis, 336.
 Marl, Fall, 354.
 Marl, Leverett, 684.
 Mercury, Aguilera, 14.
 Mica, Ellis, 333, 334.
 Mica, Miller, 779.
 Mica, O'Harra, 815.
 Mica, Perkins, 849.
 Mica, Pratt, 865.
 Mineral waters, Todd, 1029.
 Molybdenum, Aguilera, 14.
 Monazite, Pratt, 865.
 Natural gas, Bownocker, 108.
 Natural gas, Chalmers, 166.
 Natural gas, Lane, 653.
 Natural gas, Nickles, 804.
 Natural gas, Todd, 1029.
 Nickel, Aguilera, 14.
 Nickel, Miller, 779.
 Nickel, Silver, 964.
 Nitrate, Wagenen, 1078.
 Ocher, Ellis, 334.
 Ocher, Pratt, 865.
 Oil, Bownocker, 108.
 Oil, Gordon, 411.
 Oil, Harris, 450.
 Oil, Hayes, Vaughan, and Spencer, 473.
 Oil, Hill, 501.
 Oil, Knight, 585.
 Oil, Lakes, 619, 622.
 Oil, Lane, 653.
 Oil, Mabery, 715.
 Oil, Ohly, 816.
 Oil, Richardson and Wallace, 897.
 Oil, Thiele, 1020.
 Onyx-marble, Ordoñez, 817.
 Opal, Aguilera, 14.
 Peat, Ellis, 334.
 Petroleum, Chalmers, 166.
 Petroleum, Dumble, 305.
 Petroleum, Fishback, 370.
 Petroleum, Fuller, 395.
 Petroleum, Griswold, 433.
 Petroleum, Hayes, 473.
 Petroleum, Laguerenne, 617.
 Petroleum, Landes, 643.
 Petroleum, Lucas, 699.
 Petroleum, Todd, 1029.
 Phosphate, Ochseneius, 811.
 Phosphate rock, Branner and Newson, 113.
 Platinum, Kemp, 563.
 Platinum, Knight, 584.
 Platinum, Wells and Penfield, 1112.
 Portland cement, Russell, 924.
 Portland cement, Taff, 1008.
 Portland cement, Wilder, 1139.
 Pyrite, Meissner, 761.

Economic geology—Continued.*Economic products described—Continued*

Pyrite, Miller, 779.
 Pyrite, Pratt, 865.
 Pyrophyllite, Pratt, 865.
 Quartz, Pratt, 865.
 Quicksilver, Haverstock, 464.
 Quicksilver, Hill, 497, 504.
 Quicksilver, Phillips, 853.
 Rhodolite, Pratt, 865.
 Road materials, Landes, 643.
 Road materials, McCallie, 721.
 Road materials, Martin, 736.
 Road materials, Mathews, 738.
 Ruby, Kunz, 610.
 Ruby, Pratt, 865.
 Rutile, Merrill, 773.
 Salt, Aguilera, 14.
 Salt, Clendenin, 198.
 Salt, Lane, 651, 655.
 Salt, Veatch, 1071.
 Sandstone, Eckel, 322.
 Sandstone, Lane, 651.
 Sandstone, Martin, 736.
 Sapphire, Kunz, 611.
 Sapphire, Pratt, 865.
 Selenium, Aguilera, 14.
 Serpentine, Pratt, 865.
 Silver, Aguilera, 14.
 Silver, Emmons, 345.
 Silver, Hill, 500.
 Silver, Lindgren, 687, 690, 691.
 Silver, Malcolmson, 731.
 Silver, Mendenhall, 762.
 Silver, O'Harra, 815.
 Silver, Pratt, 865.
 Silver, Ransome, 884.
 Silver, Weed, 1095.
 Slate, Hayes, 475.
 Slate, Perkins, 844, 845, 849.
 Slate, Richardson, 896.
 Soils, Darton, 245, 246.
 Soils, Hayes, 475.
 Spodumene, O'Harra, 815.
 Strontianite, Ellis, 333.
 Strontium, Aguilera, 14.
 Sulphur, Aguilera, 14.
 Sulphur, Kerr, 566.
 Sulphur, Phillips, 852.
 Talc, Miller, 779.
 Talc, Pratt, 864, 865.
 Tellurium, Aguilera, 14.
 Tin, Aguilera, 14.
 Tin, Collier, 209.
 Tin, O'Harra, 815.
 Topaz, Aguilera, 14.
 Tourmaline, Kunz, 610.
 Tungsten, O'Harra, 815.
 Tungsten, Smith, 973.
 Vanadium, Aguilera, 14.
 Water power, Leverett, 684.
 Water power, Pressey, 863.
 Water supply, Babcock, 40.
 Water supply, Chalmers, 166.
 Water supply, Darton, 245, 246.
 Water supply, Gregory, 430, 431.
 Water supply, Harris, 449.

Economic geology—Continued.*Economic products described—Continued.*

- Wolframite, Irving, 546.
 Wolframite, Raymond, 888.
 Zinc, Bain, 44.
 Zinc, Branner, 111.
 Zinc, Emmons, 345.
 Zinc, Hedburg, 480.
 Zinc, Keyes, 570.
 Zinc, Kummel, 608.
 Zinc, Van Hise and Bain, 1061.
 Zinc, Wheeler, 1114.
 Zircon, Pratt, 865.

Florida.

- Oligocene of western Europe and southern United States, Maury, 759.
 Recent elevation of Gulf coast, Vaughan, 1067.

Geologic formations, description and synonymy.

- Aftonian, Quaternary, New Jersey, Salisbury, 930.
 Albany division, Carboniferous, Texas, Taff, 1007.
 Albertan, Quaternary, New Jersey, Salisbury, 930.
 Allegheny formation, Carboniferous, Maryland. Included in Coal Measures. Includes Brookville coal, Clarion coal, Clarion sandstone, Ferriferous limestone, Kittanning limestone, Kittanning sandstone, "Split-six" coal, Lower Kittanning coal, Middle Kittanning coal, Upper Kittanning coal, Lower Freeport sandstone, Lower Freeport limestone, Lower Freeport coal, Upper Freeport sandstone, Upper Freeport limestone and Bolivar clay, and Upper Freeport coal, Clark and Martin, 178.
 Allegheny formation, Carboniferous, Maryland, Martin, 735.
 Allegheny formation, Carboniferous, Pennsylvania, Campbell, 158.
 Allegheny formation (includes Bluebaugh coal, Parker coal, Davis coal, Thomas coal), Carboniferous, Maryland, White, 1117.
 Allegheny formation (includes Brookville coal, Clarion coal, Lower Kittanning coal, Middle Kittanning coal, Upper Kittanning coal, Lower Freeport coal, Upper Freeport coal), Carboniferous, Pennsylvania, White and Campbell, 1119.
 Alma limestone, Carboniferous, Kansas, Prosser, 877.
 Alpena limestone, Devonian, included in Traverse group, Michigan, Grabau, 417.
 Alpreston quartzites (Flathead quartzites), Cambrian, Montana, Weed, 1095.
 Altyn limestone, Algonkian, Montana, Willis, 1144.
 Americus limestone, Carboniferous, Kansas, Prosser, 877.
 Anacacho formation, Cretaceous, Texas, Hill, 499.
 Anaktuovuk series, Cretaceous, Alaska, Schrader, 942.
 Anona chalk, Cretaceous, Texas, Hill, 499.
 Antigua formation, West Indies, Spencer, 987.
 Antlers sands, Cretaceous, Texas, Hill, 499.

Geologic formations—Continued.

- Antrim, Devonian, Michigan, Lane, 647.
 Antrim shales, Devonian, Michigan, Russell, 924.
 Appekunny argillite, Algonkian, Montana, Willis, 1144.
 Aquia formation, Eocene, Tertiary, Maryland, Shattuck, 955.
 Arapahoe formation, Colorado, Lee, 671.
 Arbuckle limestone, Cambro-Silurian, Indian Territory, Taff, 1006.
 Arcadia clays, Tertiary, Louisiana, Lerch, 682.
 Arictina formation, Cretaceous, Texas, Dumble, 309.
 Arikaree formation, Tertiary, Wyoming, Nebraska, Adams, 8.
 Arkadelphia beds, Cretaceous, Texas, Hill, 499.
 Arkansan series, Carboniferous, Arkansas, Keyes, 568.
 Arlington diabase, Juratrias, New Jersey, Merrill, 770.
 Armuchee chert, Devonian, Georgia, Hayes, 475.
 Arundel formation, Cretaceous, Maryland, Clark and Bibbins, 176.
 Atoka formation, Carboniferous, Indian Territory, Taff, 1006.
 Atwell sand, Devonian, Pennsylvania, Fuller, 395.
 Austin chalk, Cretaceous, Texas, Dumble, 309.
 Austin chalk, Cretaceous, Texas, Hill, 499.
 Austin chalk, Cretaceous, Texas, Hill and Vaughan, 505.
 Austin chalk, Cretaceous, Texas, Prather, 861.
 Bangor limestone, Carboniferous, Georgia, Hayes, 475.
 Barclay limestone, Carboniferous, Kansas, Beede, 76.
 Barnegat limestone, Cambro-Silurian, New York, Eckel, 322.
 Barstow series, Tertiary, California, Hershey, 485.
 Basal limestone, Carboniferous, Texas, Hill, 499.
 Batesville sandstone, Carboniferous, Arkansas, Adams, 7.
 Bath-reef series, West Indies, Spencer, 987.
 Bancari division, Tertiary, Arizona, Dumble, 304.
 Beaver limestone, Cambrian, Alabama, Hayes, 475.
 Beekmantown, Ordovician, Vermont, Perkins, 850.
 Bell shale, included in Traverse group, Devonian, Michigan, Grabau, 417.
 Bellevue beds, Ordovician, Ohio and Indiana, Nickles, 805.
 Bellvale flags, Devonian, New York, Eckel, 322.
 Bellvale flags, Devonian, New Jersey, Kummel and Weller, 609.
 Bennington limestone, Cretaceous, Indian Territory, Taff, 1006.
 Benton, Cretaceous, Montana, Willis, 1144.
 Benton formation, Cretaceous, North Dakota, Babcock, 40.

Geologic formations—Continued.

- Benton group, Cretaceous, Kansas, Lindgren, 691.
- Benton sand, Tertiary, Missouri, Marbut, 733.
- Benton shales, Jurassic, Colorado, Hatcher, 456.
- Berea Grit, Carboniferous, Ohio, Bownocker, 108.
- Bergman series, Cretaceous?, Alaska, Schrader, 942.
- Bergman series, probably Mesozoic, Alaska, Mendenhall, 763.
- Berkeleyan series, California, Lawson and Palache, 666.
- Big Injun series, Carboniferous, Ohio, Bownocker, 108.
- Black River limestone, Ordovician, Canada, Ellis, 333, 334.
- Black River limestone, Ordovician, Vermont, Perkins, 850.
- Blacktail Deer Creek beds, Tertiary, Douglass, 291.
- Blossburg formation, Devonian, Pennsylvania, Fuller, 395.
- Boggy formation, Carboniferous, Indian Territory, Taff, 1007.
- Boggy shale, Carboniferous, Indian Territory, Taff, 1006.
- Boise granite, Archean, Idaho, Russell, 1022.
- Bokchito formation, Cretaceous, Indian Territory, Taff, 1006.
- Boone formation, Carboniferous, Arkansas, Adams, 7.
- Boscabel boulder beds, Triassic, Virginia, Woodworth, 1179.
- Boston group, Carboniferous, Arkansas, Adams, 7.
- Bradford schist, Ordovician, Vermont, Richardson, 896.
- Brazil formation, Carboniferous, Indiana, Fuller and Ashley, 397.
- Brownstown beds, Cretaceous, Texas, Hill, 499.
- Brownwood division (Canyon division), Carboniferous, Texas, Hill, 499.
- Brule clay, Tertiary, South Dakota, Darton, 246.
- Brule formation, Tertiary, Wyoming, Nebraska, Adams, 8.
- Buda formation, Cretaceous, Texas, Hill, 499.
- Buda limestone, Cretaceous, Texas, Hill and Vaughan, 505.
- Burlingame limestone and shale, Carboniferous, Kansas, Prosser, 877.
- Burlingame shales, Carboniferous, Kansas, Beede, 76.
- Burlington limestone, Carboniferous, Missouri, Adams, 7.
- Caddo limestone, Cretaceous, Indian Territory, Taff, 1006.
- Calceiferous formation, Ordovician, Canada, Ellis, 334.
- Calhoun shales, Carboniferous, Kansas, Beede, 76.
- Campan series, Pliocene, Tertiary, California, Lawson and Palache, 666.

Geologic formations—Continued.

- Caney shale, Carboniferous, Indian Territory, Taff, 1006.
- Canyon division, Carboniferous, Texas, Taff, 1007.
- Carlile formation, Cretaceous, South Dakota, Darton, 246.
- Carmichael clay, Quaternary, Pennsylvania, Campbell, 158.
- Cason shale, Upper Silurian, Arkansas, Adams, 7.
- Castle conglomerate, Colorado, Lee, 671.
- Catskill formation, Devonian, Pennsylvania, Campbell, 158.
- Catskill formation, Devonian, Pennsylvania, Fuller, 395, 396.
- Cavanal (Cavaniol) group, Carboniferous, Indian Territory and Arkansas, Taff, 1007.
- Cedar Creek beds, Tertiary, Colorado, Matthew, 751.
- Cemetery limestone, Cambrian, Montana, Weed, 1095.
- Chadron formation, Tertiary, Wyoming, Adams, 8.
- Chadron sand, Tertiary, South Dakota, Darton, 246.
- Charleston sandstone, Carboniferous, West Virginia, Campbell, 157.
- Chase stage, Carboniferous, Kansas, Prosser, 877.
- Chattanooga shale, Devonian, Georgia, Hayes, 475.
- Chazy, Ordovician, Vermont, Perkins, 850.
- Chazy formation, Ordovician, Canada, Ellis, 334.
- Chazy limestone, Ordovician, Canada, Ellis, 333.
- Chazy shales, Ordovician, Canada, Ellis, 333.
- Chemung formation, Devonian, Pennsylvania, Fuller, 395.
- Cherokee shale, Carboniferous, Kansas, Iowa, Bain, 45.
- Cherokee shales, Carboniferous, Missouri, Adams, 7.
- Chesapeake formation, Tertiary, Virginia, North Carolina, Darton, 245.
- Chickamauga limestone, Silurian, Alabama and Georgia, Hayes, 475.
- Chickachoc chert, Carboniferous, Indian Territory, Taff, 1006.
- Chico beds, Cretaceous, Oregon, Knowlton, 599.
- Chico sandstones, Cretaceous, California, Lawson and Palache, 666.
- Chocolate limestone, Carboniferous, Kansas, Beede, 76.
- Chouteau formation, Carboniferous, Mississippi Valley region, Keyes, 578.
- Chouteau limestones, Carboniferous, Missouri, Adams, 7.
- Cincinnati or Hudson group, Silurian, Illinois, Alden, 15.
- Cincinnati period, Ordovician, Ohio and Indiana, Nickles, 805.
- Cisco division, Carboniferous, Texas, Taff, 1008.
- Claiborne, Tertiary, Louisiana, Lerch, 682.

Geologic formations—Continued.

- Claiborne, Lower, Eocene, Tertiary, Louisiana, Veatch, 1072, 1073.
- Claiborne formation, Tertiary, Louisiana, Lerch, 681.
- Clark formation, Carboniferous, West Virginia, Campbell, 157.
- Clarno formation, Oregon, Knowlton, 599.
- Clear Fork formation, Carboniferous, Texas, Hill, 499.
- Clinton, Silurian, Ohio, Bownocker, 108.
- Coal Measures, Carboniferous, Maryland. Includes Pottsville, Allegheny, Conemaugh, Monongahela, and Dunkard formations, Clark and Martin, 178.
- Coal Measures, Carboniferous, Ohio, Bownocker, 108.
- Coaledo formation, Tertiary, Oregon, Smith, 978.
- Cocksfield, Eocene, Tertiary, Louisiana, Veatch, 1073.
- Cocksfield beds, included in Eocene, Tertiary, Louisiana, Harris, 448.
- Cocksfield Ferry beds, Eocene, Tertiary, Louisiana, Veatch, 1072.
- Coldwater shales, Carboniferous, Michigan, Russell, 924.
- Coleman division, Carboniferous, Texas, Hill, 499.
- Columbia, Pleistocene, Quaternary, Virginia, North Carolina, Darton, 245.
- Columbia formation, Tertiary, Louisiana, Clendenin, 198.
- Columbia group, Quaternary, Maryland, Shattuck, 953, 955.
- Columbia River lava, Tertiary, Oregon, Knowlton, 599.
- Colville series, Tertiary, Alaska, Schrader, 942.
- Comanche Peak beds, Cretaceous, Texas, Hill, 499.
- Comanche Peak limestone, Cretaceous, Texas, Hill and Vaughan, 505.
- Comanche series, Cretaceous, Texas, Hill, 499.
- Comanche series, Cretaceous, Texas, Hill and Vaughan, 505.
- Conasauga formation, Cambrian, Alabama, Hayes, 475.
- Conemaugh formation, Carboniferous, Maryland. Included in Coal Measures. Includes Lower Mahoning sandstone, Mahoning limestone, Mahoning coal, Upper Mahoning sandstone, Masontown coal, Lower Cambridge limestone, Buffalo sandstone, Upper Cambridge limestone, Lower red shales, Bakerstown coal, Saltsburg sandstone, Crinoidal coal, Ames or Crinoidal limestone, Ellick coal, Morgantown sandstone, Clarksburg limestone, Franklin or Little Clarksburg coal, Connellsville sandstone, Lower Pittsburg limestone, and Lower Pittsburg coal, Clark and Martin, 178.
- Conemaugh formation, Carboniferous, Maryland, Martin, 735.
- Conemaugh formation, Carboniferous, Pennsylvania, Campbell, 158.

Geologic formations—Continued.

- Conemaugh formation, Carboniferous, Pennsylvania, White and Campbell, 1119.
- Cornwall limestones, Silurian, New York, Eckel, 322.
- Corryville beds, Ordovician, Ohio and Indiana, Nickles, 805.
- Corsicana beds, Cretaceous, Texas, Hill, 499.
- Corwin series, Mesozoic, Alaska, Schrader, 942.
- Cottonwood limestone, Carboniferous, Kansas, Beede, 76.
- Couchiching rocks, Canada, Coleman, 205.
- Council Grove stage, Carboniferous, Kansas, Prosser, 877.
- Cow Creek beds, Cretaceous, Texas, Hill, 499.
- Crow Ridge series, Mesozoic, Montana, Weed, 1095.
- Cumberland sandstone, Ordovician, Kentucky, Foerste, 382.
- Dakota, Cretaceous, Montana, Willis, 1134.
- Dakota formation, Cretaceous, North Dakota, Babcock, 40.
- Dakota sandstone, Cretaceous, South Dakota, Darton, 246.
- Dakota sandstones, Jurassic, Colorado, Hatcher, 456.
- Decker Ferry limestone, Silurian, New Jersey, Kümmel and Weller, 609.
- Deer Creek limestone, Carboniferous, Kansas, Beede, 76.
- Del Rio clay, Cretaceous, Texas, Hill and Vaughan, 505.
- Del Rio formation, Cretaceous, Texas, Hill, 499.
- Denison beds, Cretaceous, Texas, Hill, 499.
- Denton subgroup, Cretaceous, Texas, Hill, 499.
- Des Moines, Pennsylvanian series, Iowa, Leonard, 680.
- Des Moines division, Carboniferous, Kansas, Missouri, Bain, 45.
- Des Moines stage, Pennsylvanian series, Carboniferous, Iowa, Wilder, 1139.
- Dexter sands, Cretaceous, Texas, Hill, 499.
- Ditney formation, Carboniferous, Indiana, Fuller and Ashley, 397.
- Doré conglomerate, Huronian, Canada, Coleman and Willmott, 207, 208.
- Double Mountain formation, Carboniferous, Texas, Hill, 499.
- Dover limestone, Carboniferous, Kansas, Beede, 76.
- Doyle shales, Carboniferous, Kansas, Prosser, 877.
- Duck Creek formation, Cretaceous, Texas, Hill, 499.
- Dundee limestone, Devonian, Michigan, Russell, 924.
- Dundee limestone, included in Traverse group, Devonian, Michigan, Grabau, 417.
- Dunkard formation, Carboniferous, Pennsylvania, Campbell, 158.
- Dunkard formation, Carboniferous, Maryland, Martin, 735.
- Dunkard formation, Carboniferous, Pennsylvania, White and Campbell, 1119.

Geologic formations—Continued.

- Dunkard formation, Permian?, Maryland. Includes Waynesburg sandstone, Waynesburg "A" coal, Washington coal, Upper Washington limestone, Jollytown coal, and Jollytown limestone, Clark and Martin, 178.
- Eagle Ford formation, Cretaceous, Texas, Dumble, 309.
- Eagle Ford formation, Cretaceous, Texas, Hill, 499.
- Eagle Ford formation, Cretaceous, Texas, Hill and Vaughan, 505.
- Edwards limestone, Cretaceous, Texas, Hill, 499.
- Edwards limestone, Cretaceous, Texas, Hill and Vaughan, 505.
- Eleanor slates, Huronian, Canada, Coleman and Willmott, 207, 208.
- Elkhorn hornstone, Cambrian, Montana, Weed, 1095.
- Elmdale formation, Carboniferous, Kansas, Beede, 76.
- Elmdale formation, Carboniferous, Kansas, Prosser, 877.
- Emporia limestone and shale, Carboniferous, Kansas, Prosser, 877.
- Eskridge shales, Carboniferous, Kansas, Beede, 76.
- Eskridge shales, Carboniferous, Kansas, Prosser, 877.
- Escondido series, Tertiary, California, Hershey, 485.
- Fairmount beds, Ordovician, Ohio and Indiana, Nickles, 805.
- Fayetteville shale, Carboniferous, Arkansas, Adams, 7.
- Fickett series, Carboniferous, Alaska, Schrader, 942.
- Florence flint, Carboniferous, Kansas, Prosser, 877.
- Floyd shale, Carboniferous, Alabama and Georgia, Hayes, 475.
- Fordham gneiss, New York, Eckel, 322.
- Fordham gneiss, Pre-Cambrian, New York, Merrill, 770.
- Fort Payne chert, Carboniferous, Alabama and Georgia, Hayes, 475.
- Fort Riley limestone, Carboniferous, Kansas, Prosser, 877.
- Fort Worth formation, Cretaceous, Texas, Hill, 499.
- Franciscan series, California, Lawson and Palache, 666.
- Fredericksburg division, Cretaceous, Texas, Hill, 499.
- Fredericksburg limestone, Cretaceous, Texas, Dumble, 309.
- Fredericktown limestone, Cambrian, Missouri, Adams, 7.
- Frog Mountain limestone, Devonian, Alabama, Hayes, 475.
- Frio clays, Oligocene, Tertiary, Louisiana, Veatch, 1072.
- Frio clays, Tertiary, Texas and Louisiana, Fishback, 370.
- Fuson formation, Cretaceous, South Dakota, Darton, 246.

Geologic formations—Continued.

- Garrison formation, Carboniferous, Kansas, Prosser, 877.
- Gasconade limestone, Ordovician, Missouri, Adams, 7.
- Georgetown formation, Cretaceous, Texas, Hill, 499.
- Georgetown limestone, Cretaceous, Texas, Hill and Vaughan, 505.
- Gerona marble, Cuba, Hayes, Vaughan, and Spencer, 473.
- Glen Rose beds, Cretaceous, Texas, Hill, 499.
- Glen Rose formation, Cretaceous, Texas, Hill and Vaughan, 505.
- Goodland limestone, Cretaceous, Indian Territory, Taft, 1006.
- Goodland limestone, Cretaceous, Texas, Hill, 499.
- Graneros shale, Cretaceous, South Dakota, Darton, 246.
- Granton diabase, Juratrias, New Jersey, Merrill, 770.
- Grand Gulf, Oligocene, Tertiary, Louisiana, Veatch, 1072, 1073.
- Grand Gulf formation, post-Tertiary, Gulf region, Smith and Aldrich, 970.
- Grand Gulf formation, Tertiary, Dall, 238.
- Grand Gulf group, Tertiary, Louisiana, Lerch, 682.
- Grand Gulf stage, included in Oligocene, Tertiary, Louisiana, Harris, 448.
- Gravina series, Mesozoic, Alaska, Brooks, 134.
- Graydon sandstone, Carboniferous, Missouri, Adams, 7.
- Grayson formation, Cretaceous, Texas, Hill, 499.
- Greenbrier formation, Carboniferous, Maryland, Martin, 735.
- Greenbrier limestone, Carboniferous, Pennsylvania, Campbell, 158.
- Greenhorn limestone, Cretaceous, South Dakota, Darton, 246.
- Green Pond conglomerate, Silurian, New Jersey, Kümmel and Weller, 609.
- Green Pond conglomerate, Silurian, New York, Eckel, 322.
- Grimes sandstones, included in Portage, Devonian, New York, Luther, 711.
- Grinnell argillite, Algonkian, Montana, Willis, 1144.
- Gros Cap greenstones, Huronian, Canada, Coleman and Willmott, 207, 208.
- Guadalupian, Carboniferous, Texas, Girty, 408. Exact synonym Permian.
- Gulf series, Cretaceous, Texas, Hill and Vaughan, 505.
- Guyandot sandstone, Carboniferous, West Virginia, Campbell, 157.
- Hampshire formation, Devonian, Maryland, Martin, 735.
- Hannibal sandstone and shales, Carboniferous, Missouri, Adams, 7.
- Hardyston quartzite, Cambrian, New Jersey, Kümmel and Weller, 609.
- Harrison diorite, post-Hudson, New York, Merrill, 770.

Geologic formations—Continued.

- Hartford (Topeka) limestone, Carboniferous, Kansas, Beede, 76.
 Hartshorne sandstone, Carboniferous, Indian Territory, Taff, 1006, 1007.
 Harvey conglomerate, Carboniferous, West Virginia, Campbell, 157.
 Helen iron formation, Huronian, Canada, Coleman and Willmott, 208.
 Hensell sands, Cretaceous, Texas, Hill, 499.
 Hinton formation, Carboniferous, West Virginia, Campbell, 157.
 Hobo-Gulch lime-shale, Cambrian, Montana, Weed, 1095.
 Horsetail Creek beds, Tertiary, Colorado, Matthew, 751.
 Horton series, Canada, Fletcher, 376.
 Horton slates, Devonian or Carboniferous, Canada, Haycock, 471.
 Howard limestone, Carboniferous, Kansas, Beede, 76.
 Hudson formation, Ordovician, New York, Eckel, 322.
 Hudson River group, Ordovician, New York, Clarke, 189.
 Hudson River shale?, Ordovician, New Jersey, Kummel and Weller, 609.
 Hudson schist, Silurian, New York, Merrill, 770.
 Huntington series, Triassic?, Oregon, Lindgren, 687.
 Hunton limestone, Indian Territory, Taff, 1006.
 Huronian, Willmott, 1160.
 Idaho formation, Tertiary, Idaho, Russell, 923.
 Idalia shale, Tertiary, Missouri, Marbut, 733.
 Illinois drift, Quaternary, Salisbury, New Jersey, 930.
 Illinoisan drift, Quaternary, Leverett, 685.
 Iowan, Quaternary, New Jersey, Salisbury, 930.
 Iron Mountain porphyry, pre-Cambrian, Missouri, Adams, 7.
 Ithaca group, Devonian, New York, Clarke, 189.
 Iward limestone, Ordovician, Missouri, Adams, 7.
 Jackford sandstone, Silurian, Indian Territory, Taff, 1006.
 Jackson, Eocene, Tertiary, Louisiana, Veatch, 1072, 1073.
 Jackson stage, included in Eocene, Tertiary, Louisiana, Harris, 448.
 Jackson stage, Tertiary, Louisiana, Casey, 164.
 Jennings formation, Devonian, Maryland, Martin, 723.
 John Day series, Tertiary, Oregon, Knowlton, 598.
 Judith River beds, Cretaceous, Hatcher, 463.
 Judith River beds, Cretaceous, Stanton, 995.
 Kanawha black flint, Carboniferous, West Virginia, White, 1123.
 Kanawha formation, Carboniferous, West Virginia, Campbell, 157.

Geologic formations—Continued.

- Kansan, Quaternary, New Jersey, Salisbury, 930.
 Kansan or pre-Kansan drift, Quaternary, Leverett, 685.
 Kanuti series, probably Paleozoic, Alaska, Mendenhall, 763.
 Kanwaka shales, Carboniferous, Kansas, Beede, 76.
 Keene limestone, Devonian, Montana, Weed, 1095.
 Kemp clay, Cretaceous, Texas, Hill, 499.
 Kenai series, probably Tertiary, Alaska, Mendenhall, 763.
 Kenai series, Tertiary, Alaska, Schrader, 931.
 Keokuk limestone, Mississippian series, Carboniferous, Iowa, Savage, 937.
 Ketchikan series, Upper Paleozoic, Alaska, Brooks, 134.
 Kiamichi formation, Cretaceous, Indian Territory, Taff, 1006.
 Kiamitia clays, Cretaceous, Texas, Hill, 499.
 Kigluaik series, Alaska, Brooks, 132.
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 seebachi n. sp., Walcott, 1080.
 signalis n. sp., Walcott, 1080.
 sipo n. sp., Matthew, 746.
 socialis v. Seebach, Walcott, 1080,
 cfr. socialis von Seebach, Matthew, 746.
 sp., Matthew, 746.
 subconica Kutorga, Walcott, 1080.
 Actinocystis Lindström, Lambe, 638.
 variabilis Whiteaves, Lambe, 638.
 Allops amplius Marsh, Osborn, 826.
 crassicornis Marsh, Osborn, 826.
 serotinus Marsh, Osborn, 826.
 Allorisma kansasensis n. sp., Beede, 74.
 Alnus macrodonta n. sp., Knowlton, 599.
 Alticamelus n. gen., Matthew, 751.
 altus (Marsh), Matthew, 751.
 Amphicyon americanus Wortman, Matthew, 754.
 sinapius n. sp., Matthew, 754.
 ursinus Cope, Matthew, 754.
 Amplexus Sowerby, Lambe, 638.
 cingulatus Billings, Lambe, 638.
 exilis Billings, Lambe, 638.
 yandelli Milne Edwards and Haime, Lambe, 638.
 Anaptomorphus æmulus Cope, Osborn, 827.
 homunculus Cope, Osborn, 827.
 Anchura condoniana n. sp., Anderson, 33.
 Andromeda crassa Lesq., Knowlton, 599.

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Genera and species described—Continued.

- Angelina? sp.?, Matthew, 746.
 Anisonchus Cope, Douglass, 290.
 Anomalocaris n. gen., Woodward, 1177.
 canadensis Whiteaves, Woodward, 1177.
 Anthonomus eversus n. sp., Scudder, 948.
 fossilis n. sp., Scudder, 948.
 lapsus n. sp., Scudder, 949.
 Arachnophyllum Dana, Lambe, 638.
 diffuens Milne Edwards and Haime (sp.), Lambe, 638.
 eximium Billings (sp.), Lambe, 638.
 mamillare Dale Owen (sp.), Lambe, 638.
 pentagonum Goldfuss (sp.), Lambe, 638.
 Aralia? sp. Knowlton, Knowlton, 599.
 sp. Knowlton, Knowlton, 599.
 Archelon ischyros, Wieland, 1135.
 Archihicoria siouxensis n. gen. and n. sp., Barbour, 52.
 siouxensis Barbour, Knowlton, 599.
 Arretotherium acutidens n. gen. and sp., Douglass, 291.
 Arthropycus elegans n. sp., Herzer, 492.
 Arcuaceras n. gen., Herzer, 495.
 ohioense n. sp., Herzer, 495.
 termicameratum n. sp., Herzer, 495.
 Asaphellus homfrayi var., Matthew, 746.
 (?) planus n. sp., Matthew, 746.
 Ascoceras gibberosum n. sp., Sardeson, 933.
 Asplenium subsimplex (Lesq.) Knowlton, Knowlton, 599.
 Aulacophyllum enormis n. sp., Herzer, 495.
 excentricum n. sp., Herzer, 495.
 Aviculopecten occidentalis, Beede, 78.
 subequivalvus n. sp., Beede, 74.
 vanvleeti n. sp., Beede, 78.
 Baculites fairbanksi n. sp., Anderson, 33.
 Badister antecursor n. sp., Scudder, 948.
 Baëna antiqua n. sp., Lambe, 639.
 hatcheri Hay, Lambe, 639.
 hatcheri n. sp., Hay, 467.
 Bakewellia gouldii n. sp., Beede, 78.
 Baptanodon discus?, Gilmore, 405.
 Bathygenys alpha n. gen. and sp., Douglass, 291.
 Bathyuriscus howelli Walcott, Woodward, 1177.
 Batostomella leia n. sp., Condra, 213.
 Bellerophon bretonensis n. sp., Matthew, 746.
 insulæ n. sp., Matthew, 746.
 semisculptus n. sp., Matthew, 746.
 sublævis Hall, Sardeson, 935.
 Bembidium damnosum n. sp., Scudder, 948.
 expletum n. sp., Scudder, 948.
 haywardi n. sp., Scudder, 948.
 præteritum n. sp., Scudder, 948.
 vanum n. sp., Scudder, 948.
 vestigium n. sp., Scudder, 948.
 Berberis? gigantea n. sp., Knowlton, 599.
 Betula bendirei n. sp., Knowlton, 599.
 ? dayana n. sp., Knowlton, 599.
 heteromorpha n. sp., Knowlton, 599.
 Blastomeryx? sp., Matthew, 751.
 Blothrophyllum Billings, Lambe, 638.
 decoratum Billings, Lambe, 638.
 Boreodon matutinus n. sp., Lambe, 639.

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Genera and species described—Continued.

- Bottosaurus perrugosus* Cope, Lambe, 639.
Bradoria (?) *ornata* n. sp., Matthew, 747.
 rugulosa, Matthew, 747.
 scrutator, Matthew, 747.
 vigilans, Matthew, 747.
Bradorona observator n. sp., Matthew, 747.
 perspicator n. sp., Matthew, 747.
 spectator, n. sp., Matthew, 747.
Bröggeria n. subg. of *Obolus*, Walcott, 1080.
Brontosaurus, Hatcher, 458.
Brontotherium bucco Cope, Osborn, 826.
 curtum Marsh, Osborn, 826.
 dolichoceras Scott & Osborn, Osborn, 826.
 gigas Marsh, Osborn, 826.
 hypoceras Cope, Osborn, 826.
 leidy n. sp., Osborn, 826.
Bucania champlainensis Whitfield, Raymond, 887.
Bunælurus, Matthew, 753.
Campodus de Koninck, Eastman, 317.
Campodus, Eastman, 314.
 corrugatus (Newberry and Worthen), Eastman, 317.
 variabilis (Newb. & W.), Eastman, 311.
Capromeryx furcifer n. gen. and sp., Matthew, 757.
Campyloprion, Eastman, 314.
 annectans n. gen. and sp., Eastman, 311.
Cardiocaris, Clarke, 186.
Carpolithes brandonianus Lesquereux, Knowlton, 596.
Cassia? sp. Newb., Knowlton, 599.
Caulopteris magnifica n. sp., Herzer, 492.
Cayugaea n. gen., Lambe, 638.
 whiteavesiana n. sp., Lambe, 638.
Celastrus confluens n. sp., Knowlton, 599.
 dignatus n. sp., Knowlton, 599.
Centrinus disjunctus n. sp., Scudder, 948.
Ceratiocaris (*Limnocraris*) *precedens* n. sp., Clarke, 190.
Ceratogaulus rhinocerus n. gen. and sp., Matthew, 755.
Ceratopora conglomerata n. sp., Greene, 428.
 flabellata n. sp., Greene, 428.
 nanus n. sp., Greene, 428.
 separata n. sp., Greene, 428.
Ceriocrinus harshbarger n. sp., Beede, 74.
Champsosaurus annectens Cope, Lambe, 639.
Chonetes cinctatus n. sp., Herzer, 495.
Chonophyllum Milne Edwards and Haime, Lambe, 638.
 belli Billings, Lambe, 638.
 canadense Billings (sp.), Lambe, 638.
 curvatum n. sp., Herzer, 495.
 cylindricum n. sp., Herzer, 495.
 magnificum Billings, Lambe, 638.
 nymphale Billings (sp.), Lambe, 638.
Cimoliasaurus magnus Leidy, Lambe, 639.
Cinnamomum bendirei n. sp., Knowlton, 599.
Cladiscothallus wardi, Renault, 894.
Cladodus, Clark, 175.
 formosus n. sp., Hay, 469.
Cladoselache fylei, Dean, 275.
Claosaurus annectens Marsh, Beecher, 71.
 (*Thespesius*) *annectens* Marsh, Hatcher, 453.

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Genera and species described—Continued.

- Clidastes stenops* Cope, Williston, 1156.
Clisiophyllum Dana, Lambe, 638.
 billingsi Dawson (sp.), Lambe, 638.
Cochliodus, Eastman, 316.
Codaster attenuatus Lyon, Rowley, 429.
 attenuatus? Lyon, Rowley, 429.
 attenuatus var. *robustus* n. var., Rowley, 429.
 pyramidatus Shumard, Rowley, 429.
 sp.?, Rowley, 430.
Cœlacanthus exiguus n. sp., Eastman, 312.
Cœlambus cribrarius n. sp., Scudder, 948.
 derelictus n. sp., Scudder, 948.
 disjunctus n. sp., Scudder, 948.
 infernalis n. sp., Scudder, 948.
Colodon cingulatus n. sp., Douglass, 291.
 sp., Douglass, 291.
Columnaria Goldfuss, Lambe, 638.
 alveolata Goldfuss, Lambe, 638.
 calicina Nicholson, Lambe, 638.
 disjuncta Whiteaves, Lambe, 638.
 halli Nicholson, Lambe, 638.
 rugosa Billings (sp.), Lambe, 638.
Conocardium oklahomensis n. sp., Beede, 78.
Crania? *reversa* n. sp., Sardeson, 932.
Cratægus flavescens Newb., Knowlton, 599.
 imparilis n. sp., Knowlton, 599.
Crepidophyllum Nicholson and Thompson, Lambe, 638.
 archiaci Billings (sp.), Lambe, 638.
 colligatum Billings (sp.), Lambe, 638.
Crocodylus humilis Leidy, Lambe, 639.
Crossothea sagittata, Sellards, 951.
 trisecta n. sp., Sellards, 951.
Crotalocrinus cora (Hall), Weller, 1109.
Cryptobium cinctum n. sp., Scudder, 948.
 detectum n. sp., Scudder, 948.
Ctenacanthus, Eastman, 314.
 coxianus St. John and Worthen, Eastman, 314.
 decussatus n. sp., Eastman, 314.
 gracillimus N. & W., Eastman, 314.
 longinodosus n. sp., Eastman, 314.
 lucasi n. sp., Eastman, 314.
 semicostatus St. John and Worthen, Eastman, 314.
 solidus n. sp., Eastman, 314.
 sp. *indet.*, Eastman, 314.
 spectabilis St. John and Worthen, Eastman, 314.
 varians St. John and Worthen, Eastman, 314.
 venustus n. sp., Eastman, 314.
Cucumites lesquereuxii n. sp., Knowlton, 596.
Cunninghamites elegans (Corda) Endl., Hollick, 524.
Cyathocrinus snivelyi n. sp., Rowley, 915.
 granulosus n. sp., Rowley, 915.
Cyathophyllum Goldfuss, Lambe, 638.
 anna Whitfield (sp.), Lambe, 638.
 anticostiense Billings, Lambe, 638.
 articulatum Wahlenberg, Lambe, 638.
 athabascense Whiteaves, Lambe, 638.
 cæspitosum Goldfuss, Lambe, 638.

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Genera and species described—Continued.

- Cyathophyllum capax* n. sp., Herzer, 495.
ceratites Goldfuss, Lambe, 638.
coalitum Rominger, Lambe, 638.
dawsoni Lambe, Lambe, 638.
ellipticum Hall and Whitfield (sp.), Lambe, 638.
euryone Billings, Lambe, 638.
exiguum Billings (sp.), Lambe, 638.
glabrum Keyes, Sardeson, 935.
halli Milne Edwards and Haime (sp.), Lambe, 638.
interruptum Billings, Lambe, 638.
parvulum Whiteaves (sp.), Lambe, 638.
pasithea Billings, Lambe, 638.
pennanti Billings, Lambe, 638.
petraoides Whiteaves, Lambe, 638.
quadrigenum Goldfuss, Lambe, 638.
richardsoni Meek (sp.), Lambe, 638.
spenceri Lambe, Lambe, 638.
tenuiseptatum Billings (sp.), Lambe, 638.
thoroldense n. sp., Lambe, 638.
vermiculare Goldfuss, var. *præcursor* Frech, Lambe, 638.
wahlenbergi Billings, Lambe, 638.
waskasense Whiteaves, Lambe, 638.
zenkeri Billings, Lambe, 638.
Cyclotrypa (?) *barberi* Ulrich n. sp., Condra, 213.
Cyclus De Koninck, Rogers, 912.
communis n. sp., Rogers, 912.
limbatus n. sp., Rogers, 912.
minutus n. sp., Rogers, 912.
packardi n. sp., Rogers, 912.
permarginatus n. sp., Rogers, 912.
Cylindrodon fontis n. gen. and sp., Douglass, 291.
Cymbiodyta extincta n. sp., Seudder, 948.
Cymbospondylus (?) *grandis* Leidy, Merriam, 766.
petrinus Leidy, Merriam, 766.
piscosus Leidy, Merriam, 766.
Cynaretus n. gen., Matthew, 737.
saxatilis n. sp., Matthew, 754.
Cynodictis gregarius (Cope), Matthew, 751.
Cynodontomys latidens Cope, Osborn, 827.
Cyon or *Icticyon* sp., Matthew, 754.
Cyperacites sp., Knowlton, 599.
Cypricardites descriptus n. sp., Sardeson, 932.
dignus n. sp., Sardeson, 932.
finitimus n. sp., Sardeson, 932.
(Vanuxemia) fragosus n. sp., Sardeson, 932.
Cyrtoceras columbiense n. sp., Herzer, 495.
creescens n. sp., Herzer, 495.
dresbachense n. sp., Sardeson, 933.
?winonicum n. sp., Sardeson, 933.
Cystiphyllus latifrons n. sp., Herzer, 492.
Cystiphyllum Lonsdale, Lambe, 638.
aggregatum Billings, Lambe, 638.
basalis n. sp., Herzer, 495.
discoideum n. sp., Herzer, 495.
maritimum Billings, Lambe, 638.
niagarensis Hall (sp.), Lambe, 638.
perlamellosum n. sp., Herzer, 495.

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Genera and species described—Continued.

- Cystiphyllum prostratum* n. sp., Herzer, 495.
retrosum n. sp., Herzer, 495.
scyphus n. sp., Herzer, 495.
sulcatum Billings, Lambe, 638.
vesiculosum Goldfuss (sp.), Lambe, 638.
Cystodictya anisopora n. sp., Condra, 213.
lophodes n. sp., Condra, 213.
Dacentrurus nov. nom., Lucas, 704.
Dammara borealis Heer, Hollick, 524.
Daphnæus Leidy, Hatcher, 460.
dodgei Scott, Hatcher, 460.
felinus Scott, Hatcher, 460.
Deinodon explanatus Cope (sp.), Lambe, 639.
horridus Leidy, Lambe, 639.
Dekayella, Cumings, 230.
Dekayia, Cumings, 230.
perfrondosa, n. n., Cumings, 230.
subfrondosa n. sp., Cumings, 230.
ulrichi-lobata n. var., Cumings, 230.
Desmoceras ashlandicum n. sp., Anderson, 33.
colusaense n. sp., Anderson, 33.
dilleri n. sp., Anderson, 33.
hoffmanni Gabb, Anderson, 33.
jugalus Gabb, Anderson, 33.
lecontei n. sp., Anderson, 33.
subquadratum n. sp., Anderson, 33.
sugatum Forbes, Anderson, 33.
voyi n. sp., Anderson, 33.
Dielasma schucherti n. sp., Beede, 78.
Dikelocephalus minnesotensis Owen, Sardeson, 933.
Dinichthys, Clark, 175.
Dinichthys, Wright, 1188.
pustulosus, Eastman, 316.
Diniotis bombifrons Adams, Matthew, 751.
fortis Adams, Matthew, 751.
squalidens Cope, Matthew, 751.
Dinocyon (*Borophagus*) *diversidens* (Cope), Matthew, 754.
(?Borophagus) gidleyi n. sp., Matthew, 752.
(Borophagus) mæandrinus (Hatcher), Matthew, 754.
Diospyros elliptica n. sp., Knowlton, 599.
Diphyodus longirostris n. sp., Lambe, 639.
Diphyphyllum Lonsdale, Lambe, 638.
arundinaceum Billings, Lambe, 638.
caespitosum Hall (sp.), Lambe, 638.
multicaule Hall (sp.), Lambe, 638.
rugosum Milne Edwards and Haime (sp.), Lambe, 638.
simcoense Billings (sp.), Lambe, 638.
strictum Milne Edwards and Haime (sp.), Lambe, 638.
verneuianum Milne Edwards and Haime (sp.), Lambe, 638.
Diplocaulus Cope, Broili, 131.
magnicornis, Broili, 131.
Discinocaris, Clarke, 186.
Dolichorhynchops osborni n. sp., Williston, 1155.
Douvillierias mamillare Schloth., Anderson, 33.
Echinocaris clarkii n. sp., Beecher, 73.
randalli n. sp., Beecher, 73.
socialis, Beecher, 73.

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Genera and species described—Continued.

- Ecceuliomphalus fredericus* n. sp., Raymond, 887.
Edestus, Eastman, 314, 316.
 heinrichi N. & P., Eastman, 314.
Eleutheroocrinus casedayi Shumard and Yandell, Rowley, 429.
Elonichthys perpennatus n. sp., 312.
Elosaurus n. gen., Peterson and Gilmore, 850.
 parvus n. sp., Peterson and Gilmore, 850.
Elymocarissiliqua, Beecher, 73.
Emmelezoe decora n. sp., Clarke, 190.
Endoceras consuetum n. sp., Sardeson, 933.
Eospongia Billings, Seely, 950.
 varians Billings, Seely, 950.
Eoporeodon major var. *cedrensis* n. var., Matthew, 751.
Equisetum oregonense Newb., Knowlton, 599.
 sp., Knowlton, 599.
Erato veraghoënsis (?) Stol., Anderson, 33.
Eretmocrinus brevis n. sp., Rowley, 915.
 ? *parvus* n. sp., Rowley, 915.
Erismacanthus M'Coy, Eastman, 317.
 formosus n. sp., Eastman, 317.
Erycus consumptus n. sp., Scudder, 948.
Escasona (?) *ingens* n. sp., Matthew, 747.
 rutellum n. sp., Matthew, 747.
 (?) *vetus* n. sp., Matthew, 747.
 ortoni n. sp., Clarke, 190.
Eucastor (Leidy) Allen, Matthew, 755.
Eucrotaphus helenæ n. sp., Douglass, 291.
Eumys minor n. sp., Douglass, 291.
Eunoea accola n. gen. and sp., Clarke, 186.
Euomphalus laxus White, Sardeson, 935.
 springvalensis White, Sardeson, 935.
 winonensis n. sp., Sardeson, 933.
Euprotegonia puericensis (Cope), Douglass, 290.
Eurymya, Sardeson, 934.
Favosites cystoides n. sp., Herzer, 495.
 scamani n. sp., Greene, 428.
Fenestella binodata n. sp., Condra, 213.
 conradi var. *compactilis* n. var., Condra, 213.
 cyclofenestrata n. sp., Condra, 213.
 gracilis n. sp., Condra, 213.
 parvipora n. sp., Condra, 213.
 polyporoides n. sp., Condra, 213.
 sp. (?), Condra, 213.
 spinulosa n. sp., Condra, 213.
 subrudis n. sp., Condra, 213.
Ficus ? *oregoniana* Lesq., Knowlton, 599.
Fistulipora carbonaria var. *nebrascensis* n. var., Condra, 213.
Forbesiocrinus, Springer, 990.
Fraxinus integrifolia Newb., Knowlton, 599.
Ginkgo sp., Knowlton, 599.
Glyptostrobus europæus ungeri Heer, Knowlton, 597.
 ungeri Heer, Knowlton, 599.
Gomphoceras isoteloides n. sp., Herzer, 495.
 parallelum n. sp., Herzer, 495.
Goniograptus thureani McCoy, Ruedemann, 919.
Gymnusa (?) *absens* n. sp., Scudder, 948.
Gyrinus confinis LeC., Scudder, 948.

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- Gyrodès siskiyouensis* n. sp., Anderson, 33.
Hadrophylum linguloideum n. sp., Herzer, 495.
Haliotis lomaënsis n. sp., Anderson, 33.
Haliserites Sternberg, White, 1116.
Hamites (*Ptychoceras*) *aëquicostatum* Gabb, Anderson, 33.
 armatus n. sp., Anderson, 33.
 cylindraceus de France, Anderson, 33.
 ellipticus n. sp., Anderson, 33.
 phœnixensis n. sp., Anderson, 33.
 (*Ptychoceras*) *solanœense* n. sp., Anderson, 33.
Harpalus conditus n. sp., Scudder, 948.
Helicoceras indicum (?) Stol., Anderson, 33.
Helicoprion, Eastman, 314.
Helicotoma ? *peccatonica* n. sp., Sardeson, 933.
Heliophyllum adnascens n. sp., Greene, 429.
 halleri E. & H., Shimer and Grabau, 963.
 ignotum n. sp., Greene, 429.
Helix (*Epiphragmophora*?) *dubiosa* nom. prov., Stearns, 998.
Heteroceras ceratopse n. sp., Anderson, 33.
 simplicostatum Whitfield, 1130.
Heterodontus japonicus, Dean, 275.
Heterotrypa, Cumings, 230.
Hicoria? *oregoniana* n. sp., Knowlton, 599.
Holcodiscus cfr. *theobaldianus* Stol., Anderson, 33.
Holopea obesa Whitfield, Sardeson, 933.
 cfr. *obliqua* Hall, Sardeson, 932.
Homotrypa bassleri n. sp., Nickles, 806.
 frondosa (Edwards and Haimé), Cumings, 230.
Hoplitosaurus n. gen., Lucas, 704.
Hyænodon cruentus Leidy, Matthew, 751.
 montanus n. sp., Douglass, 291.
 minutus n. sp., Douglass, 291.
Hydrangea bendirei (Ward) Knowlton, 599.
Hydroporus inanimatus n. sp., Scudder, 948.
 inundatus n. sp., Scudder, 948.
 sectus n. sp., Scudder, 948.
Hyolithes acadicus, Matthew, 741.
 carinatus, Matthew, 741.
 caudatus, Matthew, 741.
 danianus, Matthew, 741.
 gracilis, Matthew, 741.
 gracillimus, Matthew, 742.
 gracillimus n. mut., Matthew, 741.
 sericeus, Matthew, 741.
Hypopsodus Leidy, Osborn, 827.
 (*Lemuravus*) *distans* Marsh, Osborn, 827.
 lemoinianus Cope, Osborn, 827.
 marshi n. sp., Osborn, 827.
 (*Esthonyx*) ? *miticulus* Cope, Osborn, 827.
 paulus, Osborn, 827.
 powellianus Cope, Osborn, 827.
 nintensis n. sp., Osborn, 827.
 vicarius Cope, Osborn, 827.
 wortmani n. sp., Osborn, 827.
Hypertragulus Cope, Matthew, 756.
Hypisodus Cope, Matthew, 751, 756.
 minus Cope, Matthew, 756.
Ichthyodichnites acadicus n. sp., Ami, 26.

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- Ictops acutidens* n. sp., Douglass, 291.
Idiophyllum rotundifolium Lesquereux, Sellards, 952.
Incolaria securiformis Herz., Herzer, 494.
Indiana lippa n. sp., Matthew, 747.
ovalis n. sp., Matthew, 747.
Indrodon malaris Cope, Osborn, 827.
Inoceramus adunca n. sp., Anderson, 33.
klamathensis n. sp., Anderson, 33.
Juglans? bendirei n. sp., Knowlton, 599.
crassifolia n. sp., Knowlton, 599.
cryptata n. sp., Knowlton, 599.
oregoniana Lesq., Knowlton, 599.
Juniperus hypnoides Heer (?), Hollick, 524.
Lathrobium antiquatum n. sp., Scudder, 948.
debilitatum n. sp., Scudder, 948.
exesum n. sp., Scudder, 948.
frustum n. sp., Scudder, 948.
inhibitum n. sp., Scudder, 948.
Laurus oregoniana n. sp., Knowlton, 599.
Leiorhynchus huronensis Nicholson, Shimer and Grabau, 963.
laura Billings, Shimer and Grabau, 963.
multicostus Hall, Shimer and Grabau, 963.
Leperditia (?) *rugosa* n. sp., Matthew, 747.
Lepidotus occidentalis Leidy, Lambe, 639.
Leptobolus cfr. *linguloides*, Matthew, 746.
Leptochoerus Leidy, Matthew, 751.
quadricuspis n. sp., Hatcher, 453.
Leptomeryx Leidy, Matthew, 756.
esulcatus Cope, Matthew, 756.
mammifer Cope, Matthew, 756.
semicinctus Cope, Matthew, 756.
sp. indesc., Matthew, 756.
Lestosaurus gracilis Marsh, Williston, 1156.
Lianophycus polyfrons n. gen. and sp., Herzer, 494.
Lima sp., Beede, 78.
Limnenantes (?) *anceps* n. sp., Douglass, 291.
platyceps n. gen. and sp., Douglass, 291.
Limnocyon Marsh, Wortman, 1186.
dysodus Wortman, 1186.
medius n. sp., Wortman, 1186.
velox Marsh, Wortman, 1186.
verus Wortman, 1186.
Limnotherium affine Marsh, Osborn, 827.
Lindigia (?) *nodosum* n. sp., Anderson, 33.
Lingula aurora Hall, Sardeson, 933.
brainerdi n. sp., Raymond, 887.
dolata n. sp., Sardeson, 933.
(?) lens n. sp., Matthew, 743.
morsii N. H. Winchell, Sardeson, 932.
mosia Hall, Sardeson, 933.
winona Hall, Sardeson, 933.
Lingulella concina n. sp., Matthew, 743.
cfr. davisii McCoy, Matthew, 746.
(?) escasoni n. sp., Matthew, 743.
cfr. lepis, Matthew, 746.
Linnarssonella n. g., Walcott, 1080.
girtyi n. sp., Walcott, 1080.
minuta Hall and Whitfield (sp.), Walcott, 1080.
tennesseensis n. sp., Walcott, 1080.
Liquidambar europæum patulum n. var., Knowlton, 599.

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- Liquidambar pachyphyllum* n. sp., Knowlton, 599.
sp. (?), Knowlton, 599.
Lithostrotion Fleming, Lambe, 638.
macouni Lambe, Lambe, 638.
Lobocrinus dubius n. sp., Rowley, 915.
(?) dubius var. *pustulosus* n. var., Rowley, 915.
(?) insolitus n. sp., Rowley, 915.
Lonsdaleia McCoy, Lambe, 638.
picroense Billings (sp.), Lambe, 638.
Loricera exita n. sp., Scudder, 638.
Loxonema difficile n. sp., Sardeson, 935.
Lucina atoma n. sp., Casey, 164.
perminuta n. sp., Casey, 164.
Lygodium kaulfusii Heer, Knowlton, 599.
Lysorophus tricarinatus, Case, 163.
Lytoceras (Gabbiceras) *angulatum* n. sp., Anderson, 33.
argonautarum n. sp., Anderson, 33.
batesi (Trask) Gabb, Anderson, 33.
(Tetragonites) cala (?) (Forbes) Stolicza, Anderson, 33.
rel. duvalianum d' Orb., Anderson, 33.
(Tetragonites) jacksonense n. sp., Anderson, 33.
(Gaudryceras) kayei Forbes, Anderson, 33.
(Gaudryceras) sacya Forbes, Anderson, 33.
Maclurea magna Le Sueur, Raymond, 887.
Macrodon cfr. *cochlearis* Winchell, Sardeson, 935.
Maclura gabbiana n. sp., Anderson, 33.
Magnolia alternans Heer, Hollick, 524.
Meekopora prosseri Ulrich n. sp., Condra, 212.
Megacerops angustigenis Cope, Osborn, 826.
avus Marsh, Osborn, 826.
bicornutus n. sp., Osborn, 826.
brachycephalus n. sp., Osborn, 826.
coloradensis Leidy, Osborn, 826.
dispar Marsh, Osborn, 826.
marshi n. sp., Osborn, 826.
robustus Marsh, Osborn, 826.
? selwynianus Cope, Osborn, 826.
tichoceras Scott & Osborn, Osborn, 826.
Megalocnus Leidy, Vaughan, 1065.
Merychys Leidy, Matthew, 751.
elegans Leidy, Matthew, 751.
Merycochoerus Leidy, Matthew, 751.
proprius Leidy, Matthew, 751.
rusticus Leidy, Matthew, 751.
Mesonyx obtusidens Cope, Wortman, 1184.
Metablastus bipyramidalis? Hall, Rowley, 430.
Microcyclos Meek and Worthen, Lambe, 638.
discus Meek and Worthen, Lambe, 638.
Microsypops (Bathrodon) *annectens* Marsh, Osborn, 827.
gracilis, Osborn, 827.
scottianus Cope, Osborn, 827.
(Mesacodon) speciosus Marsh, Osborn, 827.
(Bathrodon) typus Marsh, Osborn, 827.
uintensis Osborn, Osborn, 827.
Miocænus acolytus (Cope), Douglass, 290.
Mixodectes crassiusculus Cope, Osborn, 827.
pungens Cope, Osborn, 827.

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Genera and species described—Continued.

- Modiolopsis affinis* n. sp., Sardeson, 932.
contigua n. sp., Sardeson, 932.
fountainensis n. sp., Sardeson, 932.
gregalis n. sp., Sardeson, 932.
litoralis n. sp., Sardeson, 932.
plana Hall, Sardeson, 934.
postica n. sp., Sardeson, 932.
senecta n. sp., Sardeson, 932.
 (?) cfr. *solvensis* Hicks, Matthew, 746.
Monoclonius belli n. sp., Lambe, 639.
canadensis n. sp., Lambe, 639.
dawsoni n. sp., Lambe, 639.
Monocraterion, Matthew, 746.
Mortoniaceras crenulatum n. sp., Anderson, 33.
Murchisonia argylensis n. sp., Sardeson, 933.
 cfr. *gracilis* Hall, Sardeson, 932.
putilla n. sp., Sardeson, 933.
 sp. indet., Sardeson, 935.
Mustela ogygia n. sp., Matthew, 751.
Myalina? *abstemia* n. sp., Sardeson, 935.
copei n. sp., Whitfield, 1129.
Mylagaulus (Mesogaulus) ballensis Riggs, Matthew, 755.
laevis n. sp., Matthew, 755.
monodon Cope, Matthew, 751, 755.
pantiensis n. sp., Matthew, 755.
sesquipedalis Cope, Matthew, 755.
Myledaphus bipartitus Cope, Lambe, 639.
Myrica oregoniana n. sp., Knowlton, 599.
 ? *personata* n. sp., Knowlton, 599.
Myriothea, Sellards, 951.
Myrsine elongata Newb., Hollick, 524.
Naticopsis sp., Beede, 78.
Nautilus charlottensis Whiteaves, Anderson, 33.
gabbi n. sp., Anderson, 33.
Nebria abstracta n. sp., Scudder, 948.
Nematophyton, Prosser, 878.
Neolenus serratus Rominger sp., Woodward, 1177.
Neurankylus n. gen., Lambe, 639.
eximius n. sp., Lambe, 639.
Neuropteris rarinervis Bunb., Sellards, 952.
Nodophycus thallyformis n. gen. and sp., Herzer, 492.
Notharctus (Thinolestes) anceps Marsh, Osborn, 827.
 (Telmatolestes) *crassus* Marsh, Osborn, 827.
 (Hyopsodus) *gracilis* Marsh, Osborn, 827.
nunienus Cope, Osborn, 827.
 (Tomitherium) *rostratum* Cope, Osborn, 827.
tenebrosus Leidy, Osborn, 827.
 (Limnotherium) *tyrannus* Marsh, Osborn, 827.
venticolus n. sp., Osborn, 827.
Nucleocrinus angularis Lyon, Rowley, 428.
cucullatus n. sp., Rowley, 428.
grenci M. & G., Rowley, 428.
imitator n. sp., Rowley, 428.
stichteri n. sp., Rowley, 428.
venustus M. & G., Rowley, 428.
verneuili Troost, Rowley, 428.
verneuili var. *inflatus* n. var., Rowley, 428.

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Genera and species described—Continued.

- Nucleocrinus verneuili* var. *pomum* (?) Etheridge and Carpenter, Rowley, 428.
verneuili var. *sulcatus* n. var., Rowley, 428.
Nyctodactylus, Williston, 1152, 1154.
Obolus (Lingulella) atavus Matthew, Walcott, 1080.
 (Lingulella) *canius* n. sp., Walcott, 1080.
 (Lingulella) *collicia* Matthew, Walcott, 1080.
 (Lingulella) *concinus* Matthew, Walcott, 1080.
 (Westonia) *finlandensis* n. sp., Walcott, 1080.
 (Lingulella) *lens* Matthew, Walcott, 1080.
 (Bröggeria) *salteri* Holl, Walcott, 1080.
 (Lingulella) *schmalensei* n. sp., Walcott, 1080.
 (Lingulella) *spatulus* n. sp., Walcott, 1080.
 (Lingulella) *welleri* n. sp., Walcott, 1080.
Ogygopsis klotzi Rom. sp., Woodward, 1177.
Olbodotes copei n. gen. and sp., Osborn, 827.
Olophrum arcanum n. sp., Scudder, 948.
celatum n. sp., Scudder, 948.
dejectum n. sp., Scudder, 948.
Omphyma Rafinesque and Clifford, Lambe, 948.
eriphyle Billings (sp.), Lambe, 948.
verrucosa Rafinesque and Clifford, Lambe, 948.
Onoclea sensibilis fossilis Newb., Knowlton, 597.
Ophileta alturensis n. sp., Sardeson, 933.
fausta n. sp., Sardeson, 932.
Orbitremites grandis n. sp., Rowley, 429.
oppelti n. sp., Rowley, 429.
Orchestes avus n. sp., Scudder, 948.
Oreodon robustum n. sp., Douglass, 291.
Ornithomimus altus n. sp., Lambe, 639.
Ornithostoma ingens Williston, Lucas, 703.
Orohippus? sp., Hatcher, 453.
Orthis (Billingsella) pepina Hall, Sardeson, 933.
Orthoceras minnesotense, n. sp., Sardeson, 932.
 sp. undet., Sardeson, 932.
Pachydiscus henleyensis n. sp., Anderson, 33.
merriami n. sp., Anderson, 33.
newberryanus Meek (not Gabb), Anderson, 33.
sacramenticus n. sp., Anderson, 33.
Pachyphyllum Milne Edwards and Haime, Lambe, 638.
devoniense Milne Edwards and Haime, Lambe, 638.
Palaeodictyota n. gen., Whitfield, 1132.
ramulosa Spencer sp., Whitfield, 1132.
Palaeolagus Leidy, Matthew, 755.
 ? *agapetillus* Cope, Matthew, 755.
haydeni Cope, Matthew, 755.
intermedius Matthew, Matthew, 751, 755.
temnodon n. sp., Douglass, 291.
turgidus Cope, Matthew, 755.
Palaeophycus clavifrons n. sp., Herzer, 490.

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- Palaeoscincus asper* n. sp., Lambe, 639.
costatus Leidy, Lambe, 639.
Panenka canadensis n. sp., Whiteaves, 1127.
Pantolambda (?), Douglass, 290.
cavirictis Cope (?), Douglass, 290.
 (?) sp. Douglass, 290.
Parabolina dawsoni, n. sp., Matthew, 743.
 cfr. *limitis* Brög., Matthew, 746.
quadrata n. sp., Matthew, 746.
Patriofelis ferox Marsh, Wortman, 1185.
Patrobus decessus n. sp., Scudder, 948.
frigidus n. sp., Scudder, 948.
Pecten (*Lyropecten*) *dilleri* n. sp., Dall, 236.
Pectunculus pacificus n. sp., Anderson, 33.
Pelycodus Cope, Osborn, 827.
frugivorus Cope, Osborn, 827.
jarrovii Cope, Osborn, 827.
tutus Cope, Osborn, 827.
Pelycosauria, Case, 163.
Pentremites conoideus Hall, Rowley, 429.
conoideus var. *amplus* n. var., Rowley, 429.
conoideus var. *perlongus* n. var., Rowley, 429.
godoni DeFrance, Rowley, 429.
koninckanus Hall, Rowley, 429.
pyriformis Say, Rowley, 429.
Pentremitidea (?) *approximata* n. sp., Rowley, 429.
 (?) *dubia* n. sp., Rowley, 429.
leda ? var. *magna* n. var., Rowley, 429.
Peripristis semicircularis (Newb. & W.), Eastman, 313.
Petraia Münster, Lambe, 638.
aperta Billings, Lambe, 638.
profunda Conrad (sp.), Lambe, 638.
pygmaea Billings, Lambe, 638.
Phillipsastraea d'Orbigny, Lambe, 638.
billingsi Calvin, Lambe, 638.
verneuili Milne Edwards and Haime, Lambe, 638.
verrilli Meek (sp.), Lambe, 638.
verrilli var. *exiguum*, n. var., Lambe, 638.
Philonthus claudus n. sp., Scudder, 948.
Phlaocyon leucosteus Matthew, Matthew, 751.
Phlaeosinus squalidus Scudd., Hopkins, 527.
Pholadomya anaëna n. sp., Anderson, 33.
Phyllites bifurcies n. sp., Knowlton, 599.
inexpectans n. sp., Knowlton, 599.
oregonianus n. sp., Knowlton, 599.
personatus n. sp., Knowlton, 599.
 sp., Knowlton, 599.
Phylloceras shastalense n. sp., Anderson, 33.
Piloceras corniculum n. sp., Sardeson, 933.
Pinna lata n. sp., Beede, 74.
Pinus lindgrenii n. sp., Knowlton, 589, 593.
Pityoxylon microporosum brandonianum n. var., Knowlton, 596.
Placenticeras californicum n. sp., Anderson, 33.
pacificum Smith, Anderson, 33.
Platacodon nanus Marsh, Hatcher, 453.
Platanus acroides? (Göppert) Heer, Knowlton, 599.

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- Platanus condoni* (Newb.) Knowlton, Knowlton, 599.
nobilis? Newb., Knowlton, 599.
Platyceras arkonense n. sp., Shimer and Grabau, 963.
bucculentum Hall, Shimer and Grabau, 963.
subspinosum Hall, Shimer and Grabau, 963.
thetis Hall, Shimer and Grabau, 963.
vetulum n. sp., Sardeson, 932.
Platynus exterminatus n. sp., Scudder, 948.
interglacialis n. sp., Scudder, 948.
interitus n. sp., Scudder, 948.
longaevis n. sp., Scudder, 948.
Platystrophia lynx, Cumings and Mauck, 231.
Plectorthis plicatella Hall, Raymond, 887.
Pleurophorus sp., Beede, 78.
whitei n. sp., Beede, 74.
Pleurotomaria aiens n. sp., Sardeson, 932.
 sp., Beede, 78.
sweeti Whitfield, Sardeson, 933.
Podozamites sp.?, Hollick, 524.
Polypora bassleri n. sp., Condra, 213.
remota n. sp., Condra, 213.
reversipora n. sp., Condra, 213.
ulrichi n. sp., Condra, 213.
Populus lindgreni Knowlton, Knowlton, 599.
Prestwichia randalli n. sp., Beecher, 70.
Prionastraea vancouveri, Gregory, Vaughan, 1063.
Prionotropis branneri n. sp., Anderson, 33.
Proamphicyon nebrascensis n. gen. and sp., Hatcher, 460.
Procamelus Leidy, Matthew, 751.
fissidens Cope, Matthew, 751.
robustus Leidy, Matthew, 751.
Proscalops n. gen., Matthew, 751.
miocenens n. sp., Matthew, 751.
Protamnocyon inflatus n. gen. and sp., Hatcher, 460.
Protolabis Cope, Matthew, 751.
angustidens Cope, Matthew, 751.
heterodontus Cope, Matthew, 751.
montanus Douglas, Matthew, 751.
Protomeryx Leidy, Matthew, 751.
campester n. sp., Matthew, 751.
Protopteris kellermaniana n. sp., Herzer, 494.
Protostega, Williston, 1150.
Prunus? *merriami* n. sp., Knowlton, 599.
 ? *tufacea* n. sp., Knowlton, 599.
Psaronius, Herzer, 491.
juncens n. sp., Herzer, 492.
vermiculus n. sp., Herzer, 494.
Pseudoniscus, Clarke, 190.
roosevelti n. sp., Clarke, 190.
Pteranodon (*Ornithostoma*), Williston, 1153.
Pterophycus plicatus n. gen. and sp., Herzer, 494.
Pterostichus depletus n. sp., Scudder, 948.
Pterotheca expansa Emmons, Raymond, 887.
Ptilodictya ? sp.?, Sardeson, 932.
Ptilodus primævus n. sp., Lambe, 639.
Ptychoparia cordillerae Walcott, Woodward, 1177.

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Genera and species described—Continued.

- Pycnostylus* Whiteaves, Lambe, 638.
elegans Whiteaves, Lambe, 638.
guelphensis Whiteaves, Lambe, 638.
Pyramidula lecontei n. sp., Stearns, 998.
shimekii (Pilsbry), Shimek, 960.
Quedius deperditus n. sp., Scudder, 948.
Quercus affinis (Newb.), Knowlton, 599.
breweri Lesq., Knowlton, 599.
consimilis Newb., Knowlton, 599.
dayana n. sp., Knowlton, 599.
duriuscula n. sp., Knowlton, 599.
horniana Lesq., Knowlton, 599.
merriami n. sp., Knowlton, 599.
oregoniana n. sp., Knowlton, 599.
pseudo-lyrata Lesq., Knowlton, 599.
simplex Newb., Knowlton, 599.
 ? sp., Knowlton, 599.
ursina n. sp., Knowlton, 599.
Rafinesquina champplainensis n. sp., Raymond, 887.
Raphistoma leiosomellum n. sp., Sardeson, 933.
lenticulare Emmons, Raymond, 887.
lewistonense n. sp., Sardeson, 933.
minnesotense Owen, Sardeson, 933.
oweni n. sp., Sardeson, 933.
ruidum n. sp., Sardeson, 933.
Raufella ? *fucoida* n. sp., Sardeson, 932.
Rhamphorhynchus, Williston, 1153.
Rhineastes eruciferus Cope (sp.), Lambe, 639.
Rhynchonella densleonis n. sp., Anderson, 33.
whiteana n. sp., Anderson, 33.
Rhus bendirei Lesq., Knowlton, 599.
 ? sp. Lesq., Knowlton, 599.
Rulac cratægifolium n. sp., Knowlton, 599.
Sabal rigida n. sp., Hatcher, 455.
Sagenocrinus, Springer, 990.
americanus n. sp., Springer, 990.
Salix dayana n. sp., Knowlton, 599.
englehardtii Lesq., Knowlton, 599.
meeki Newb., Hollick, 524.
mixta n. sp., Knowlton, 599.
perplexa n. sp., Knowlton, 599.
pseudo-argentea n. sp., Knowlton, 599.
 sp. ? Knowlton, Knowlton, 599.
Sapindus merriami n. sp., Knowlton, 599.
obtusifolius Lesq., Knowlton, 599.
oregonianus n. sp., Knowlton, 599.
Sarcolemur furcatus Cope, Osborn, 827.
pygmaeus Cope, Osborn, 827.
Scapherpeton tectum Cope, Lambe, 639.
Scaphites condoni n. sp., Anderson, 33.
condoni var. *appressus* n. var., Anderson, 33.
gillisi n. sp., Anderson, 33.
inermis n. sp., Anderson, 33.
klamathensis n. sp., Anderson, 33.
perrini n. sp., Anderson, 33.
roguensis n. sp., Anderson, 33.
Schizambon priscus n. sp., Matthew, 743.
Schizodus sp., Beede, 78.
Schlerophyllina dichotoma Heer (?) Hollick, 524.
Schloenbachia bakeri n. sp., Anderson, 33.
blanfordiana Stol. (?), Anderson, 33.

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- Schloenbachia buttensis* n. sp., Anderson, 33.
chicoensis Trask, Anderson, 33.
gabbi n. sp., Anderson, 33.
knighteni n. sp., Anderson, 33.
multicosta n. sp., Anderson, 33.
oregonensis n. sp., Anderson, 33.
propinqua Stol., Anderson, 33.
siskiyouensis n. sp., Anderson, 33.
Schlüteria diabloensis n. sp., Anderson, 33.
Schmidtella acuta, Matthew, 747.
 (?) *pervetus*, Matthew, 747.
Sciurus jeffersoni n. sp., Douglass, 291.
Seminula argentea (Shepard) Hall, Beede, 75, 77.
Sequoia angustifolia Lesq., Knowlton, 599.
langsfordii (Brgt.) Heer, Knowlton, 599.
 sp., Knowlton, 599.
Shastasaurus, Merriam, 766, 767.
alexandre n. sp., Merriam, 766.
altispinus n. sp., Merriam, 766.
careyi n. sp., Merriam, 766.
osmonti n. sp., Merriam, 766.
pacificus n. sp., Merriam, 766.
perrini n. sp., Merriam, 766.
Sinopa Leidy, Wortman, 1187.
agilis Marsh, Wortman, 1187.
major Wortman, 1183.
minor n. sp., Wortman, 1183.
rapax Leidy, Wortman, 1187.
Solenopora compacta, Seely, 950.
Sonneratia stantoni n. sp., Anderson, 33.
Spathioceras, Clarke, 186.
Sphærophthalmus fletcheri n. sp., Matthew, 743.
Sphenodictya cornigera n. gen. and sp., Herzer, 493.
Spirifer mucronatus var. *arkonensis* n. var., Shimer and Grabau, 963.
 var. *thedfordensis* n. var., Shimer and Grabau, 963.
pikensis n. sp., Rowley, 915.
Stegoceras n. gen., Lambe, 639.
validus n. sp., Lambe, 639.
Stemmatopteris distans n. sp., Herzer, 494.
Steneofiber Geoffroy, Matthew, 755.
complexus, Matthew, 755.
complexus n. sp., Douglass, 291.
hesperus, Matthew, 755.
hesperus n. sp., Douglass, 291.
gradatus, Matthew, 755.
montanus, Matthew, 755.
nebrascensis, Matthew, 755.
panus, Matthew, 755.
peninsulatus, Matthew, 755.
Stenopora distans n. sp., Condra, 213.
heteropora n. sp., Condra, 213.
 (?) *polyspinosa* n. sp. (provisional), Condra, 213.
Sterecephalus tutus n. sp., Lambe, 639.
Stigmaria, Poole, 855.
Stoliczka dispar (d'Orb.) *Stoliczka*, Anderson, 33.
Straparollus intralobatus n. sp., Sardeson, 933.
Strophochetus n. gen., Seely, 950.
brainerdi n. sp., Seely, 950.

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- Strophochetus atratus* n. sp., Seely, 950.
ocellatus n. sp., Seely, 950.
prunus n. sp., Seely, 950.
richmondensis S. A. Miller, Seely, 950.
Strophomena, Miller, 776.
incurvata Shepard, Raymond, 887.
Streptelasma Hall, Lambe, 638.
angulatum Billings (sp.), Lambe, 638.
caliculus Hall, Lambe, 638.
corniculum Hall, Lambe, 638.
latusculum Billings (sp.), Lambe, 638.
latuseculum var. *trilobatum* Whiteaves, Lambe, 638.
prolificum Billings (sp.), Lambe, 638.
rectum Hall, Lambe, 638.
robustum Whiteaves, Lambe, 638.
rusticum Billings (sp.), Lambe, 638.
selectum Billings (sp.), Lambe, 638.
Subulites exactus n. sp., Sardeson, 933.
Symborodon acer Cope, Osborn, 826.
montanus Marsh, Osborn, 826.
torvus Cope, Osborn, 826.
Talarocrinus simplex Shumard, Rowley, 429.
Taxocrinus Springer, 990.
Taxodium distichum miocenium Heer, Knowlton, 599.
Tellinomya absimilis n. sp., Sardeson, 932.
novicia n. sp., Sardeson, 932.
Thamniscus palmatus n. sp. (provisional), Condra, 213.
pinnatus n. sp., Condra, 213.
Thamnocladus clarkei n. gen. and sp., White, 1116.
Thecia kentuckyensis n. sp., Herzer, 495.
schrivieri n. sp. Herzer, 495.
Thinfieldia subintegrifolia (Lesq.) Knowlton, Hollick, 524.
variabilis Vel., Hollick, 524.
Thuites sp., Knowlton, 599.
Tilia weedii n. sp., Knowlton, 597.
Titanotherium, Hatcher, 454.
dispar Marsh, Hatcher, 457.
ingens Marsh, Osborn, 826.
heloceras Cope, Osborn, 826.
trigonoceras Cope, Osborn, 826.
Toxochelys latremis, Wieland, 1135.
Trachodon (Pteropelyx) altidens n. sp., Lambe, 639.
(Pteropelyx) marginatus n. sp., Lambe, 639.
(Pteropelyx) selwyni n. sp., Lambe, 639.
Triarthrus becki Green, Beecher, 69, 72.
belli n. sp., Matthew, 746.
Tricarpellites fissilis Lesq., Knowlton, 596.
Tricalycites papyraceus Newb., Hollick, 524.
Tricelocrinus woodmani M. & G., Rowley, 429.
Trigonias osborni Lucas, Hatcher, 453.
Trimerella borealis n. sp., Whiteaves, 1126.
equanensis n. sp., Whiteaves, 1126.
Trionyx foveatus Leidy, Lambe, 639, 641.
vagus Cope, Lambe, 639, 641.
Triplecia gracilis n. sp., Raymond, 886.
Troödon formosus Leidy, Lambe, 639.
Tropidocaris, Beecher, 73.
alternata, Beecher, 73.
bicarinata, Beecher, 73.

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- Tryblidium repertum* n. sp., Sardeson, 933.
Uintacrinus Grinnell, Springer, 989.
socialis Grinnell, Springer, 989.
Ulmus californica? Lesq., Knowlton, 599.
newberryi n. sp., Knowlton, 599.
speciosa Newb., Knowlton, 599.
Urotheca sp., Matthew, 746.
Ursavus sp., Matthew, 754.
Xylophomya n. gen., Whitfield, 1131.
laramiensis n. sp., Whitfield, 1131.
Zacanthoides (Olenoides) spinosus Walcott, Woodward, 1177.
Zaphrentis Rafinesque and Clifford, Lambe, 638.
affinis Billings, Lambe, 638.
amplexiformis n. sp., Greene, 429.
cingulosa Billings, Lambe, 638.
gigantea Lesueur (sp.), Lambe, 638.
incondita Billings, Lambe, 638.
minas Dawson, Lambe, 638.
mirabilis Billings (sp.), Lambe, 638.
neptun n. sp., Herzer, 495.
patens Billings, Lambe, 638.
shumardi Milne Edwards and Haime (sp.), Lambe, 638.
stokesi Milne Edwards and Haime, Lambe, 638.

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